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U.S. STRATEGIC PETROLEUM RESERVE:  
RECENT POLICY HAS INCREASED COSTS  
TO CONSUMERS BUT NOT OVERALL  
U.S. ENERGY SECURITY

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R E P O R T

PREPARED BY THE

MINORITY STAFF

OF THE

PERMANENT SUBCOMMITTEE ON  
INVESTIGATIONS

OF THE

COMMITTEE ON GOVERNMENTAL AFFAIRS  
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# CONTENTS

	Page
<b>I. EXECUTIVE SUMMARY</b> .....	1
A. Findings .....	1
B. Recommendations .....	4
C. Overview .....	5
<b>II. THE U.S. STRATEGIC PETROLEUM RESERVE</b> .....	11
A. Introduction .....	11
B. Withdrawals From the SPR .....	12
1. Emergency Drawdown .....	12
2. Exchanges .....	12
3. Non-Emergency Sales .....	13
4. The 2000 Swap: Release of 30 Million Barrels .....	13
C. Filling the SPR .....	15
1. Initial Fill of the SPR .....	15
2. Recent and Current Programs to Fill the SPR .....	16
a. 2000 Swap Refill .....	16
b. 1999 Royalty-In-Kind (RIK) Program .....	17
c. 2001 RIK Program to Fill the SPR to 700 Million Barrels .....	18
3. Strategy for Filling the SPR .....	21
a. Different Types of Crude Oil May Be Placed in the SPR .....	21
b. Market-Based Acquisition Strategy and Fill Schedules .....	22
c. SPR Market-Based Procedures Abandoned .....	24
<b>III. THE PRICING OF CRUDE OIL</b> .....	25
A. Overview of Crude Oil Markets .....	27
1. Term Contracts .....	28
2. Crude Oil Spot or Cash Market .....	29
3. Crude Oil Futures Markets .....	30
4. Over-the-Counter Markets .....	39
5. Convergence of Futures and OTC Markets .....	44
6. Disparity in Market Disclosure and Oversight .....	45
B. Crude Oil Price Benchmarks .....	48
1. Brent Crude Oil .....	48
a. 15- and 21-Day Brent .....	51
b. Brent Spot Market: "Dated Brent" .....	53
c. Brent Futures Markets .....	53
d. Brent Over-the-Counter Markets .....	54
2. West Texas Intermediate (WTI) .....	56
3. Dubai .....	57
C. The Vulnerability of the Brent Market to Squeezes .....	58
<b>IV. CASE STUDY: THE COSTS OF FILLING THE SPR IN SPRING 2002</b> .....	69
A. Introduction .....	69
B. Analysis .....	70

	Page
<b>IV. CASE STUDY—Continued</b>	
1. Large Amounts of Brent Crude Oil Were Put Into the SPR in Late 2001 and Early 2002 .....	70
2. The Use of Brent to Fill the SPR Increased the Price of Brent Relative to WTI .....	73
3. Higher Brent Prices Increased the Price of Crude Oil Imported into the United States .....	77
4. Higher Costs for Imported Crude Oils Led to Fewer Imports .....	79
5. High-Priced Imports Led Refiners to Use Crude Oil in Existing Inventories .....	87
6. Decreasing U.S. Inventories Spiked the Price of WTI .....	88
7. WTI Price Spike Led to Price Spikes for Home Heating Oil, Jet Fuel, and Diesel Fuel .....	95
8. Higher Home Heating Oil, Jet Fuel, and Diesel Fuel Prices Hurt U.S. Consumers and Businesses .....	97
9. High Crude Oil Prices Increased Refiners Costs .....	100
C. Oil Company Decisions to Send So Much Brent to the SPR .....	103
<b>V. THE 2002 SPR FILL PROGRAM</b> .....	107
A. DOE Changed SPR Policy to Require SPR Fills Regardless of Oil Prices .....	107
B. SPR Career Officials Opposed Policy Change and Warned DOE the New Policy Would Increase Oil Prices, Consumer and Taxpayer Costs .....	111
C. SPR Career Officials Warned DOE the New Policy Would Reduce U.S. Crude Oil Commercial Inventories .....	114
D. SPR Document States Filling the SPR Without Regard to Oil Prices Was Not Justified Even If A Major Supply Disruption Were Imminent .....	121
E. 2002 SPR Fills Increased Consumer Costs But Not U.S. Oil Supplies .....	122
<b>APPENDIX 1: PREVENTING MANIPULATION IN COMMODITY MARKETS</b> .....	125
<b>I. OVERVIEW</b> .....	125
<b>II. THE LAW OF MANIPULATION</b> .....	126
A. Anti-Manipulation Prohibition in Commodity Exchange Act .....	126
1. Market Power .....	129
2. Specific Intent to Create an Artificial Price .....	132
3. Artificial Price .....	135
4. Causation .....	136
5. Summary .....	137
B. Market Oversight to Detect and Prevent Manipulation .....	138
1. CFTC Market Oversight .....	138
2. Market Oversight by Approved Futures Exchanges .....	141
C. Lessons Learned from the Sumitomo Manipulation of the Copper Markets .....	143
1. Sumitomo Manipulation of the Copper Markets .....	143
2. International Agreement to Address Problems Raised by Sumitomo .....	148
<b>APPENDIX 2: HISTORY AND CURRENT STATUS OF COMMODITY MARKET REGULATION</b> .....	153
<b>I. LEGISLATIVE HISTORY OF THE COMMODITY EXCHANGE ACT</b> ...	153
A. Background on Commodities Exchanges and Need for Regulation .....	153
B. The Commodity Exchange Act .....	155
1. Grain Futures Act of 1922 .....	155
2. Commodity Exchange Act .....	157
3. 1968 Amendments .....	158
4. 1974 Amendments: Creation of CFTC .....	159

	Page
<b>II. OVER-THE-COUNTER ENERGY DERIVATIVES: EXCLUSIONS AND EXEMPTIONS FROM COMMODITY EXCHANGE ACT</b> .....	163
A. 1989 Swaps Policy Statement: Exemption for Certain OTC Swap Transactions .....	163
B. Exemptions for Certain Brent Crude Oil Contracts .....	164
1. The Transnor Decision .....	164
2. Industry Response to Transnor .....	167
3. CFTC: 15-Day Brent Contracts are Forward Contracts .....	168
C. Exemptions for Energy Contracts .....	173
1. Futures Trading Practices Acts of 1992 .....	173
2. CFTC Exemption for Energy Contracts .....	176
a. CFTC Order Granting Exemption .....	176
b. Congressional Hearings on CFTC Order .....	179
D. The Commodity Futures Modernization Act of 2000 .....	183
1. Regulatory Uncertainty Following the FTPA .....	183
2. Enactment of Commodity Futures Modernization Act .....	185
a. Summary of Relevant Provisions .....	185
b. Outstanding Issues .....	192
<b>APPENDIX 3: EXHIBITS</b> .....	194
EXHIBIT II-1 .....	194
EXHIBIT II-2 .....	204
EXHIBIT III-1 .....	217
EXHIBIT V-1 .....	219
EXHIBIT V-2 .....	220
EXHIBIT V-3 .....	221
EXHIBIT V-4 .....	222
EXHIBIT V-5 .....	227
EXHIBIT V-6 .....	228
EXHIBIT V-7 .....	229
EXHIBIT V-8 .....	233
EXHIBIT V-9 .....	234
EXHIBIT V-10 .....	240
EXHIBIT V-11 .....	243
EXHIBIT V-12 .....	244
<b>APPENDIX 4: ADDITIONAL DOCUMENTS</b> .....	247
1. Transcript of Interview of Dr. Philip Verleger on National Public Radio on March 7, 2003, regarding impact of no-deferral policy in 2002 on the price of crude oil, gasoline, and heating oil .....	247
2. Analysis by Dr. Philip Verleger, "Measuring the Economic Impact of an Oil Release from the Strategic Petroleum Reserve to Compensate for the Loss of Venezuelan Oil Production," March 20, 2003 .....	249
3. Department of Energy Statement in Response to Minority Staff Report, March 5, 2003 .....	260
4. Excerpt from Subcommittee Minority Staff presentation on the Minority Staff Report, regarding the significance of the 2002 fill rate of 135,000 barrels/day on the level of U.S. commercial crude oil inventories, March 14, 2003 .....	261
5. Additional DOE document on SPR fill policy, dated June 11, 2002, prepared by DOE SPR Office and Subcommittee on March 19, 2003 .....	266
6. Correspondence between Senators Levin and Collins and Senator Levin and U.S. Department of Energy regarding production of documents related to SPR fill rates and policy .....	279



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**I. EXECUTIVE SUMMARY**

In June 2001, the U.S. Senate Permanent Subcommittee on Investigations, then under the Chairmanship of Senator Carl Levin (now Ranking Minority Member), initiated an investigation into the increased volatility of U.S. retail gasoline prices in recent years. In April 2002, the Subcommittee released a staff report,<sup>1</sup> *Gas Prices: How Are They Really Set?*, and held hearings on retail gasoline pricing and the operation of the gasoline refining and marketing industry. During the course of this investigation, in early 2002, the Subcommittee learned of allegations that the U.S. Department of Energy's program to fill the U.S. Strategic Petroleum Reserve (SPR) was causing crude oil prices to rise significantly. The Subcommittee also learned of allegations that certain companies were manipulating crude oil prices on the New York and London futures exchanges. The Subcommittee initiated an investigation into these crude oil pricing issues that affect not only retail gasoline prices, but also prices for other key petroleum products, such as home heating oil, jet fuel, and diesel fuel.

As part of its investigation, Subcommittee Minority staff met with the U.S. Department of Energy (DOE), including its SPR Office, the U.S. Commodity Futures Trading Commission (CFTC), and the United Kingdom Financial Services Authority; interviewed representatives from futures exchanges in Chicago, New York, and London, and the Intercontinental Exchange (ICE) based in Atlanta; interviewed crude oil traders and officials from a number of companies that purchase, sell, and trade crude oil; and spoke with oil industry economists, representatives from crude oil price reporting services, and other oil industry experts. The Subcommittee Minority staff also reviewed extensive price and trading data from the New York and London crude oil futures markets; case law and legal analyses related to commodity market regulation and manipulation; numerous academic, economic and industry publications related to crude oil; and documents provided by DOE in response to Subcommittee requests. The Subcommittee Minority staff then prepared this Report describing the findings of the investigation and offering recommendations for corrective action.

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<sup>1</sup> Report printed in PSI hearings held Apr. 30 and May 2, 2002, S. Hrg. 107-509, *Gas Prices: How Are They Really Set?* on page 322.

## A. Findings

Based upon the evidence obtained during its investigation into how recent measures to fill the SPR have affected crude oil markets, the U.S. Senate Permanent Subcommittee on Investigations Minority staff makes the following findings. The findings are organized according to the two major areas of inquiry of this investigation: (1) the filling of the SPR; and (2) the operation of the crude oil markets.

### U.S. Strategic Petroleum Reserve

- 1. IN 2002, DOE BEGAN TO FILL THE SPR WITHOUT REGARD TO THE PRICE OF OIL.** The SPR Program was established to “store petroleum to reduce the adverse economic impact of a major petroleum supply interruption.” Following the tragic events of September 11, 2001, in November 2001, President Bush directed the Department of Energy to fill the SPR to its capacity of 700 million barrels “in a deliberate and cost effective manner.” In early 2002, DOE decided to fill the SPR without regard to crude oil prices. Reversing a long-standing policy of filling the SPR when crude oil prices were relatively low and deferring oil deliveries when prices were relatively high, DOE stopped granting requests to defer SPR oil deliveries. In 2002, DOE deposited about 40 million barrels of oil in the SPR at prices ranging from under \$20 to over \$30 per barrel.
- 2. FILLING THE SPR IN A TIGHT MARKET INCREASED U.S. OIL PRICES AND HURT U.S. CONSUMERS.** DOE ignored warnings by career staff that filling the SPR when oil prices were high and oil supplies were tight could drive oil prices higher and hurt consumers, did not conduct a cost-benefit analysis of the new policy, and did not attempt to estimate or track consumer or taxpayer costs. A Subcommittee Minority staff case study illustrates the high costs of the new SPR fill policy. In late 2001 and early 2002, about 25 million barrels of Brent crude oil were deposited into the SPR despite already tight supplies on world markets. In a 1-month period in mid-2002, crude oil price increases caused by SPR deposits spiked the U.S. spot price of home heating oil by 13 percent, jet fuel by 10 percent, and diesel fuel by 8 percent, imposing on U.S. consumers additional crude oil costs of between \$500 million and \$1 billion. Since then, high crude oil prices have boosted the cost of gasoline, heating oil, jet fuel, and diesel fuel, generating the types of adverse economic impacts on U.S. consumers the SPR program was designed to prevent.
- 3. FILLING THE SPR REGARDLESS OF OIL PRICES INCREASED TAXPAYER COSTS.** Prior to 2002, DOE routinely granted oil company requests to defer scheduled oil deliveries to the SPR when near-term oil prices were high compared to longer-term prices (i.e. during market backwardation), in return for deposits of extra oil at a later date. In 2000 and 2001, DOE used these deferrals to save taxpayers over \$175 million and add 7 million barrels to the SPR. By denying deferral requests for most of 2002, DOE missed opportunities

for comparable taxpayer savings and extra SPR oil. Also, by using federally-owned oil acquired from offshore oil leases for the SPR instead of selling the oil on the market when prices were high, DOE reduced revenues supporting taxpayer-funded programs. For example, at the 2002 SPR fill rate of 100,000 barrels per day, filling the SPR when crude oil is priced at \$30 per barrel rather than \$20 per barrel costs taxpayers an additional \$1 million per day. Over 3 months, the additional cost of filling the SPR approaches \$100 million, a cost ultimately borne by U.S. taxpayers.

4. **DESPITE ITS HIGH COST, FILLING THE SPR DID NOT INCREASE OVERALL U.S. OIL SUPPLIES.** In 2002, DOE put about 40 million barrels of crude oil into the SPR, increasing the total 7 percent, from about 560 million to 600 million barrels. Removing 40 million barrels from the marketplace, however, increased oil prices, which caused U.S. oil refiners to take oil from inventory instead of buying expensive new oil. In 2002, U.S. commercial crude oil inventories dropped 10 percent, from about 310 to 280 million barrels. In 2003, commercial inventories dropped again to less than 270 million barrels. Today, overall oil supplies in the United States, which consists of oil in the SPR and commercial inventories, total about 870 million barrels, about the same amount as at the end of 2001, before the recent SPR fills. Although the SPR program has placed more oil under government control, lower private sector oil inventories mean there has been no net increase in overall national oil supplies.
5. **2003 SPR DELIVERIES WILL DRIVE OIL PRICES HIGHER.** Today, crude oil prices are at a 12-year high, and U.S. commercial crude oil inventories are at record lows, threatening refinery disruptions due to inadequate oil supplies. In these market conditions, unless more oil enters the marketplace, new SPR contracts to remove another 40 million barrels from the U.S. market in 2003, if carried out, will further shrink commercial supplies, drive oil prices higher, and impose more costs on U.S. consumers and taxpayers.

#### **U.S. Crude Oil Markets**

6. **U.S. CRUDE OIL FUTURES MARKET NEEDS TO BE IMPROVED.** In 2002, after SPR deliveries removed oil from the marketplace, defects in the New York and London crude oil markets magnified local supply and demand imbalances into large increases in the price of crude oil. Although the London market made major improvements to correct defects in the Brent market, the New York Mercantile Exchange (NYMEX) has not made needed improvements to the West Texas Intermediate (WTI) futures contract that plays a key role in U.S. crude oil markets.
7. **THE UNAVAILABILITY OF KEY INFORMATION ON OVER-THE-COUNTER TRADING ACTIVITY MAKES DETECTION AND PREVENTION OF PRICE MANIPULATION DIFFICULT, IF NOT IMPOSSIBLE.** Crude oil prices are affected by trading not only on regulated exchanges

like the NYMEX, but also on unregulated “over-the-counter” (OTC) markets that have become major trading centers for energy contracts and derivatives. The lack of information on prices and large positions in OTC markets makes it difficult in many instances, if not impossible in practice, to determine whether traders have manipulated crude oil prices.

## **B. Recommendations**

Based upon the evidence obtained during its investigation and the findings in this Report, the U.S. Senate Permanent Subcommittee on Investigations Minority staff makes the following recommendations.

### **U.S. Strategic Petroleum Reserve**

1. **DEFER 2003 SPR DELIVERIES.** DOE should defer all SPR deliveries scheduled for 2003, until near-term crude oil prices fall and U.S. commercial inventories increase. DOE should publicly announce this policy change to calm markets by making it clear the SPR will not further reduce commercial oil supplies under current market conditions.
2. **CONDUCT COST-BENEFIT ANALYSIS.** DOE should analyze the costs and benefits of the current policy to fill the SPR without regard to oil prices and without deferrals, compared to its prior policy of filling the SPR when oil prices are relatively low and deferring deliveries when oil prices are relatively high or supplies are tight and the contractor agrees to deliver extra oil at a later time. When measuring the benefits, DOE should analyze whether U.S. energy security is better measured by considering only the amount of oil under government control or also the amount of oil in U.S. commercial inventories.
3. **RESTORE MARKET-BASED CRITERIA FOR GRANTING DEFERRALS.** DOE should restore its SPR business procedures allowing deferrals of oil deliveries to the SPR when crude oil prices are high or commercial crude oil supplies are tight, and the contractor agrees to deliver extra oil to the SPR at a later time. DOE should ensure these procedures allow timing SPR deliveries to avoid increased U.S. oil prices, reduced U.S. commercial oil inventories, and added U.S. consumer and taxpayer costs.

### **U.S. Crude Oil Markets**

4. **REVISE NYMEX WTI FUTURES CONTRACT.** The Commodity Futures Trading Commission (CFTC) and NYMEX should work together to revise the NYMEX WTI futures contract to reduce price volatility caused by local supply and demand imbalances in the U.S. WTI market. One option to strengthen price stability is to allow crude oil deliveries under the WTI contract to take place at more locations than the one location now specified at Cushing, Oklahoma.
5. **INCREASE OTC DISCLOSURE.** Congress should authorize the CFTC, which oversees commodity markets, to require traders in OTC markets to provide the CFTC with routine in-

formation on large positions in crude oil and energy contracts and derivatives, as well as other information that would aid the CFTC in detecting, preventing, and halting commodity market manipulation.

6. **STRENGTHEN INTERNATIONAL COOPERATION.** The CFTC should strengthen efforts with its counterparts in other countries to implement the Tokyo Communique, including advancing mechanisms to increase reporting of over-the-counter trading positions and coordinating international efforts to detect, prevent, and halt commodity market manipulation.

### C. Overview

#### U.S. Strategic Petroleum Reserve

The United States, which consumes nearly 25 percent of the 70–80 million barrels of crude oil produced daily worldwide, is by far the largest purchaser and importer of crude oil in the world today. The United States consumes about 18 million barrels each day and imports about 10 million barrels each day to meet approximately 60 percent of its daily needs. Most of this oil, about 90 percent, is refined into fuel products such as gasoline, home heating oil, jet fuel, and diesel fuel. The crude oil market is the largest commodity market in the world, and hundreds of millions of barrels are traded daily in the crude oil spot, futures, and over-the-counter markets. The world’s leading exchanges for crude oil futures contracts are the New York Mercantile Exchange (NYMEX) and the International Petroleum Exchange (IPE) in London.

In 2002, the price of crude oil in the United States nearly doubled, climbing from a low of around \$18 per barrel in January to a high of \$34 per barrel in December. Crude oil prices have continued to climb and recently reached a 12-year high of nearly \$40 per barrel.

Several global political events and economic forces were major factors pushing prices upward over this period: The steady erosion of large crude oil supplies that had built up immediately after the terrorist attacks on September 11, 2001; Saddam Hussein’s 1-month suspension of Iraqi oil exports in April 2002; labor strikes in Venezuela in late 2002 that virtually shut down crude oil production and exports to the United States; U.S. industry’s practice of keeping relatively limited crude oil inventories; and increasing speculation and concern over impending war with Iraq.

In addition to these political and economic factors affecting global crude oil supply and demand, a large player entered the crude oil market in late 2001, and significantly affected global crude oil trading throughout 2002—the U.S. Department of Energy’s (DOE) Strategic Petroleum Reserve (SPR) program.

The purpose of the SPR is to “store petroleum to reduce the adverse economic impact of a major petroleum supply interruption to the United States.” Established in 1975, after the oil shortages of the early 1970’s, the SPR has enjoyed strong and ongoing support in Congress and subsequent Administrations as a means to strengthen U.S. energy security and protect the U.S. economy from the negative economic consequences of a major oil shortage.

In November 2001, following the tragic events of September 11th, President Bush directed the Department of Energy to fill the SPR to its full capacity of 700 million barrels “in a deliberate and cost effective manner.” Very little oil had been added to the SPR since 1995, when the amount of oil in the Reserve totaled about 590 million barrels. Due to several withdrawals since then, by 2001 the total amount of oil stored in the SPR had declined to about 540 million barrels.

In late 2001, when the new policy to fill the SPR to capacity was announced, crude oil prices were low and market supplies were plentiful—favorable market conditions for filling the SPR. As crude oil markets tightened in 2002, however, DOE’s determination to direct millions of barrels out of the commercial marketplace and into the Federal Government’s SPR regardless of market conditions became a major factor pushing prices upward and commercial oil inventories downward.

The SPR Office had formerly used a market-based approach to filling the SPR, acquiring more oil when prices were relatively low and less oil when prices were relatively high. This approach took into account market conditions and allowed DOE to fill the SPR without significantly affecting crude oil market supplies or prices. Pursuant to this policy, using procedures most recently published in January 2002, DOE had routinely allowed oil companies to defer scheduled oil deliveries to the SPR when market prices were relatively high in return for providing additional barrels of crude oil at a later time. In February 2002, 1 month after the deferral procedures were published, however, DOE informed the SPR Office that requests to defer SPR deliveries would no longer be granted. Under this new no-deferral policy, which DOE publicly announced in April 2002, oil was to be deposited into the SPR regardless of the price of oil on the markets.

DOE documents show SPR career officials did not support discarding the market-based strategy they had been using to fill the SPR. SPR career officials accurately warned about the negative consequences of filling the SPR when oil prices were high and oil supplies were tight, predicting it could lead to “explosive price swings,” higher trade deficits, and higher costs for taxpayers. SPR career officials also accurately warned that higher prices would cause U.S. refiners to take oil from inventory instead of buying expensive new oil, resulting in lower total U.S. commercial inventories of crude oil. Reducing U.S. commercial crude oil inventories undercuts the fundamental purpose of the SPR program—to ensure this nation has adequate supplies of crude oil in the event of a supply disruption.

One senior SPR career official wrote that the new SPR fill policy “appears irrational to the market place” and “was discredited years ago.” He also warned: “Insisting on [SPR] deliveries in a tight market would be heavily criticized as mismanagement and would be difficult to defend.”

DOE ignored these warnings and initiated the new SPR fill policy in February 2002, without conducting a cost-benefit analysis or attempting to estimate or track consumer or taxpayer costs. Section IV of this Report provides a detailed case study illustrating the high costs of this new SPR fill policy, which was compounded by

the type of crude oil deposited into the SPR. From November 2001 through May 2002, about 25 million barrels of Brent crude oil were deposited into the SPR despite tightening Brent supplies on world markets. Brent crude oil provides a “benchmark” price for the price of two-thirds of the crude oil traded globally, and most of the Brent crude oil produced from March to May was sent to the SPR.

The placement of so much Brent crude oil into the SPR created a shortage of Brent on world markets. This shortage drove up the price of not only Brent, but also other crude oils linked to the price of Brent. These price increases pushed up the cost of crude oil exports to the United States from Europe and Africa.

Due to the increased price, resulting from both tighter market supplies in general and Brent in particular, U.S. refiners bought fewer barrels of expensive imported crude oil, choosing instead to draw down their inventories for refining crude oil into gasoline. As U.S. inventories declined, oil companies and traders began bidding up oil prices on the major U.S. crude oil exchange, the NYMEX, in the belief that there was a crude oil shortage in the United States. This trading led to a spike in the price of the principal crude oil traded on the NYMEX, West Texas Intermediate (WTI).

The sudden, sharp increase in the WTI price, which rose 20 percent, or \$5 per barrel, from mid-April to mid-May 2002, resulted in the spiking of prices of U.S. fuel products, including the spot price of home heating oil, which jumped 13 percent; jet fuel, which jumped 10 percent; and diesel fuel, which jumped 8 percent. In the span of 1 month, U.S. consumers and businesses paid additional costs of \$500 million to \$1 billion. Since then, high crude oil prices have continued to boost the cost of gasoline, heating oil, jet fuel and diesel fuel, generating the types of adverse economic impacts on U.S. consumers the SPR program was designed to prevent. These added costs can be viewed, in part, as an “SPR premium” imposed on American consumers by the new SPR fill policy directing crude oil into the SPR regardless of the price of oil.

Filling the SPR regardless of oil prices has not only increased U.S. consumer costs, it has also increased U.S. taxpayer costs. Prior to 2002, DOE routinely granted oil company requests to defer scheduled oil deliveries to the SPR when near-term oil prices are high, in return for deposits of extra oil at a later date. In 2000 and 2001, DOE used these deferrals to save taxpayers over \$175 million and add 7 million barrels to the SPR. By denying deferral requests for most of 2002, DOE missed opportunities for comparable taxpayer savings and extra SPR oil. Also, by using federally-owned oil acquired from offshore oil leases for the SPR instead of selling the oil on the market when prices were high, DOE reduced revenues supporting taxpayer-funded programs. For example, at the 2002 SPR fill rate of 100,000 barrels per day, filling the SPR when the crude oil is priced at \$30 per barrel rather than \$20 per barrel costs taxpayers an additional \$1 million per day. Over 3 months, the additional cost of filling the SPR approaches \$100 million, a cost ultimately borne by U.S. taxpayers.

Despite its high cost to U.S. consumers and taxpayers, the new SPR fill policy did not increase overall U.S. oil supplies. In 2002, the SPR program put about 40 million barrels of crude oil into the SPR, increasing the total 7 percent, from about 560 million to 600

million barrels. Removing 40 million barrels from the marketplace, however, increased oil prices, which caused U.S. oil refiners to take oil from inventory instead of buying expensive new oil. In 2002, U.S. commercial inventories dropped 10 percent, from about 310 to 280 million barrels. In 2003, commercial inventories dropped again to less than 270 million barrels, which is the lowest level in the United States in 28 years and below the recognized level at which refinery operations risk disruptions due to inadequate oil supplies. Today, overall oil supplies in the United States, which consist of the oil in the SPR and commercial inventories, total about 870 million barrels, the same amount as at the end of 2001, before the recent SPR fills. Although the SPR program has placed more oil under government control, lower private sector oil inventories mean there has been no net increase in overall national oil supplies.

The benefit to U.S. energy security of shifting oil from private sector control to government control in the SPR, without a net increase in overall oil supplies, is unclear at best, since in the event of a major supply disruption, the SPR would act to release oil on the market, shifting supplies back to the private sector.

Despite spiking U.S. oil prices, shrinking U.S. commercial inventories, and ongoing efforts by SPR career officials to restore the program's earlier market-based approach, DOE kept the SPR no-deferral policy in place throughout most of 2002. In mid-December, DOE granted three requests to defer approximately 15 million barrels of crude oil scheduled for delivery to the SPR from December 2002 through March 2003. DOE stated at the time that the deferrals were granted to avoid "negatively affect[ing] the oil market." In February 2003, however, with crude oil at \$35 per barrel, DOE announced three new contracts to deliver another 24 million barrels to the SPR. When added to prior contracts, this announcement means DOE plans to deposit a total of 40 million more barrels to the SPR in 2003. DOE also published an accelerated schedule for these SPR oil deliveries to attain a rate of about 4 million barrels per month beginning in April 2003.

Today, crude oil prices are at a 12-year high, and U.S. commercial inventories are at record lows, threatening refinery disruptions due to inadequate oil supplies. In these market conditions, unless more oil enters the marketplace, DOE plans to remove another 40 million barrels from the U.S. market in 2003, if carried out, will further shrink commercial supplies, drive oil prices higher, and impose more costs on U.S. consumers and taxpayers, without any assurance that expanded overall U.S. oil supplies will result.

Recent SPR fill policy has helped push up U.S. oil prices, reduce U.S. oil inventories, and hurt U.S. consumers and taxpayers. In light of the dubious benefits to national energy security provided by the current SPR fill policy and the high cost to U.S. consumers and taxpayers, this Report recommends: (1) a suspension of all 2003 SPR deliveries until near-term crude oil prices fall and U.S. commercial inventories increase; (2) an analysis of the relative costs and benefits of the new market-blind SPR fill policy compared to the prior market-based policy; and (3) a return to market-based procedures which allow DOE to time SPR deliveries to avoid in-

creased oil prices, reduced U.S. commercial oil inventories, and added U.S. consumer and taxpayer costs.

### **U.S. Crude Oil Markets**

When analyzing the factors influencing crude oil prices in 2002, this investigation also examined the operation of the crude oil markets and their vulnerability to manipulation. As described in Section III, crude oil markets today are far different from the market in the days when the “Seven Sisters” or OPEC ministers met behind closed doors and set crude oil prices worldwide. Although OPEC still plays a major role in determining crude oil prices through production quotas, crude oil prices also respond to the forces of supply and demand as determined by thousands of buyers and sellers in the inter-related spot, futures, and over-the-counter (OTC) commodity markets in which crude oil is traded.

Currently, the U.S. futures markets, such as the NYMEX market for crude oil, are heavily regulated and are among the most transparent commodity markets in the world. Commodity trading on these markets is subject to a variety of reporting requirements and routine market oversight designed to detect and deter fraud and manipulation. This regulation and transparency has bolstered the confidence of traders in the integrity of these markets and helped propel the United States into the leading marketplace for many of the commodities traded on these exchanges.

Increasingly, however, OTC crude oil markets, which are essentially unregulated, have become major trading centers and have become intertwined with crude oil trading on the regulated exchanges. Many of the instruments traded in the OTC markets and regulated exchanges are virtually identical, traders often operate in both settings, and both markets handle billions of dollars in commodity transactions daily, providing traders with price discovery and opportunities for hedging. Prices on one market necessarily affect the price of the same and related commodities on the other markets. Indeed, the NYMEX in New York and the IPE in London, two leading crude oil futures exchanges, have integrated their futures trading operations with OTC electronic trading of crude oil contracts, drawing the two types of markets closer together. The NYMEX now operates its own OTC electronic trading facility and even offers a futures contract for trading on its OTC facility, while the IPE was recently purchased by ICE, an OTC electronic trading facility based in Atlanta, Georgia.

The lack of transparency in OTC markets stands in sharp contrast to the transparency of the regulated exchanges. Many OTC trades take place either directly between large traders or through brokers, and there is no reporting of prices or positions to any market oversight body. While some OTC electronic trading facilities, such as ICE and the electronic OTC facility at NYMEX, post bids, offers, and prices electronically, regulators do not have access to other information, such as large trader reports, routinely provided for trading on regulated exchanges. Under current law, OTC market information is available to the CFTC only upon special request, rather than on a routine basis for periodic analysis to detect and deter manipulation. The absence of OTC trading information means, for example, that suspect trading patterns cannot be de-

tected in the OTC markets nor can OTC trading information be compared to information obtained from regulated exchanges. The absence of OTC information makes it nearly impossible for regulators and market participants to get a full understanding of market behavior in order to detect and deter manipulation.

Because crude oil prices are affected by trading not only on the regulated exchanges, but also on the unregulated OTC markets, this Report recommends increasing OTC information disclosure and market oversight to detect and deter manipulation. This recommendation is consistent with the position taken by the United States in 1997, when the CFTC met with the market regulators from other nations to discuss strengthening the international regime for preventing commodity market manipulation. At the end of this meeting all 17 participating countries, including the United States, issued the Tokyo Communique, which provides guidance and recommendations to improve commodity market surveillance and the sharing of information:

[I]nformation should be collected on a routine and non-routine basis for on-exchange and related cash and over-the-counter markets and should be designed to assess whether the market is functioning properly. Market authorities should have access to information that permits them to identify concentrations of positions and the composition of the market.

This Report also finds that, in 2002, after SPR deliveries removed oil from the marketplace, defects in the New York and London crude oil futures markets magnified local imbalances between supply and demand into large price effects. Although the London market has made major improvements to correct defects in the Brent market to avoid a recurrence of these distortions, the NYMEX has not made needed improvements to the WTI futures contract which plays a key role in U.S. crude oil markets. To minimize U.S. crude oil price distortions, this Report recommends that the NYMEX and CFTC work together to revise the crude oil futures contract traded on the NYMEX to ensure the contract more accurately reflects national, rather than local, crude oil supply and demand, including allowing WTI contract deliveries to take place at more locations than the one location now specified in the WTI contract at Cushing, Oklahoma.

The Report's recommendations for short-term improvements in the SPR fill program and long-term improvements in the crude oil markets are intended to strengthen U.S. energy security, curb the economic damage caused by increasing crude oil prices and tight supplies, and reduce the vulnerability of the U.S. crude oil markets to manipulation.

## II. THE U.S. STRATEGIC PETROLEUM RESERVE

*“To maximize long-term protection against oil supply disruptions, I am directing today the Secretary of Energy to fill the SPR up to its 700 million barrel capacity. The SPR will be filled in a deliberate and cost-effective manner.”*

*—President George W. Bush, November 13, 2001*

### A. Introduction

The purpose of the U.S. Strategic Petroleum Reserve (SPR) is “to store petroleum to reduce the adverse economic impact of a major petroleum supply interruption to the United States.”<sup>1</sup> In 1975, following the disruption to the U.S. economy resulting from the 1973 Arab oil embargo and the doubling of crude oil prices by the Organization of the Petroleum Exporting Countries (OPEC), Congress passed and President Ford signed the Energy Policy and Conservation Act (EPCA), which, among other energy-conserving measures, established a national policy to create a one-billion barrel reserve for the storage of crude oil that could be used in the event of a disruption in the supply of crude oil. The SPR program, which is operated by the U.S. Department of Energy (DOE), through its SPR program office, is designed to help stabilize domestic crude oil prices by allowing the withdrawal of oil from the reserve when either supplies are disrupted or prices are unusually high.

The SPR consists of four large underground caverns hollowed out from naturally occurring salt domes near the U.S. Gulf Coast in Texas and Louisiana.<sup>2</sup> The Gulf Coast sites were chosen because of their proximity to the extensive port facilities, pipelines, and refineries in the region, and because using the natural salt caverns was less expensive than building new tanks for the storage of the crude oil.<sup>3</sup> Currently, the SPR holds 600 million barrels and has a physical capacity of 700 million barrels.<sup>4</sup> Two basic types of crude oil streams are deposited and stored in separate caverns in the SPR: sweet crude oil (with a sulfur content of not greater than 0.5 percent) and sour crude oil (with a sulfur content greater than 0.5 per-

<sup>1</sup>U.S. Department of Energy Strategic Petroleum Reserve, Strategic Plan, October 2001, page 3.

<sup>2</sup>For security reasons, the DOE has removed additional information about these locations from its website.

<sup>3</sup>Storage costs in the SPR are approximately \$1.50 per barrel, whereas storage in above-ground tanks costs a total of about \$15 to \$18 per barrel, nearly 10 times the SPR cost. Additionally, the geologic pressure in the caverns at 2,000–4,000 feet below the surface should seal any cracks that may appear in the salt, and thereby prevent any leaks of oil out of the caverns. The temperature differential between the top and the bottom of the caverns keeps the crude oil circulating within the cavern, thereby maintaining a consistent quality of oil in each individual cavern. See DOE SPR website, at SPR-Quick Facts, at <http://www.fe.doe.gov/spr/spr-facts.shtml>.

<sup>4</sup>*Id.* Congress has authorized the SPR to hold a capacity of one billion barrels. If the SPR were to be filled to its one-billion barrel capacity, more physical storage capacity would have to be built or acquired.

cent). As of late 2002, approximately two-thirds of the current inventory is sour crude, and one-third is sweet crude oil.

Crude oil has been withdrawn from the reserve on several occasions. Currently, the SPR is being filled in two ways: (1) adding oil through the Royalty-in-Kind (RIK) program; and (2) replacing oil that was previously swapped out in 2000.

## **B. Withdrawals From The SPR**

DOE is authorized to withdraw crude oil from the SPR for several purposes. Foremost among these is the authority to withdraw crude oil to alleviate disruptions and shortages in the supply of crude oil. Additionally, DOE may conduct operational “exchanges,” “sales,” and “swaps” for a variety of purposes, and has been authorized to withdraw crude oil from the SPR in order to establish a home heating oil reserve.

### **1. Emergency Drawdown**

As the primary mission of the SPR is to provide a source of crude oil in the event of a severe disruption in the supply of crude oil, the EPCA authorizes what is called a “drawdown” upon a finding by the President that there is a “severe energy supply interruption.” Under the EPCA, a “severe energy supply interruption” occurs when: (a) an emergency situation exists and there is a significant reduction in supply which is of significant scope and duration; (b) a severe increase in the price of petroleum products has resulted from such emergency situation; and (c) such price increase is likely to cause a major adverse impact on the national economy.<sup>5</sup>

In 1990, after the Exxon Valdez oil spill interrupted the supply of Alaskan crude oil, leading to spot shortages and price increases, Congress provided DOE with additional drawdown authority. This authority allows more limited withdrawals from the SPR in the event of a “domestic or international energy supply disruption of significant scope or duration,” and where the drawdown would significantly reduce the impact of such a disruption. In these circumstances a Presidential declaration of a “severe energy supply interruption” is not required.

The first and only emergency drawdown of the SPR occurred at the outset of the Gulf War in 1991, following Iraq’s invasion of Kuwait. On January 16, 1991, immediately after launching air strikes against Iraq, President George H.W. Bush declared that an emergency situation existed regarding the supply of crude oil, and the DOE began to implement a plan to sell nearly 34 million barrels of crude oil from the SPR. Because world crude oil prices stabilized before the full amount of oil was released, only about half that volume—17.3 million barrels—were sold. This is the only time a drawdown has been ordered by the President pursuant to a declaration of an emergency under the EPCA.<sup>6</sup>

### **2. Exchanges**

The EPCA also authorizes DOE to exchange oil in the SPR for operational or other purposes. This general authority has been

<sup>5</sup> 42 U.S.C.A. § 6241 (d) (1995 & Supp. 2002).

<sup>6</sup> <http://www.fe.doe.gov/spr/spr—facts.shtml>, U.S. Dept. of Energy website.

used three times. In 1996, DOE delivered approximately 900,000 barrels of crude oil from the SPR to the ARCO Pipe Line Company after ARCO's Seaway Pipeline from the Gulf Coast to Cushing, Oklahoma was blocked by waxy crude oil. DOE took this action to provide a continuous flow of crude oil to Midwestern refineries. In return for the crude oil from the reserve, ARCO paid the government a fee and replaced the crude oil withdrawn within 6 months.

In 1988, the Department exchanged 11 million barrels of heavy Mexican Maya crude oil for a lesser volume of lighter, higher quality Mexican Olmeca and Isthmus crudes. In June, 2000, the Department agreed to withdraw 500,000 barrels from the SPR to supply crude oil to CITGO and Conoco refineries along the Gulf Coast when shipping lanes had been blocked by the collapse of a commercial dry dock into the shipping channel leading to the refineries. After the shipping lanes were restored, CITGO and Conoco replenished the Reserve for the amounts of crude oil withdrawn.

In the FY 2001 Interior Appropriations Act,<sup>7</sup> Congress formally authorized the creation of a home heating oil reserve for the northeastern region of the United States, with a capacity up to 2 million barrels. To establish the heating oil reserve, Congress authorized the DOE to obtain storage capacity and the refined product through purchase, contract, lease, or exchange with crude oil from the SPR. In 2000, DOE swapped 2.8 million barrels of crude oil from the SPR in return for 2 million barrels of heating oil for the home heating oil reserve.

### **3. Non-Emergency Sales**

On three separate occasions in 1996, Congress authorized the sale of oil from the SPR to raise revenues for the Federal Government.<sup>8</sup> In February and March, 1996, the Defense Fuel Supply Center sold a total of 5.1 million barrels of oil, through competitive bids, to four oil companies for a total of \$97.1 million, to pay for the unexpected decommissioning of the Weeks Island SPR site, which had fractured and was in imminent danger of collapse.

In late April 1996, the Congress authorized further sales of Weeks Island crude that had been transferred to other SPR storage sites, for the explicit purpose of reducing the Federal deficit. From May through August 1996, the Defense Fuel Supply Center sold 12.8 million barrels to nine oil companies, through competitive bids, at an average sale price of \$17.81 per barrel, for a total of \$227.6 million.

The same year, Congress authorized the further sale of \$220 million worth of crude oil to offset fiscal year 1997 appropriations. Between October and December the Defense Fuel Supply Center issued contracts for the sale of about 10.2 million barrels, which provided \$220 million in revenue for the U.S. Treasury.

### **4. The 2000 Swap: Release of 30 Million Barrels**

In late September 2000, with crude oil prices nearing historical highs, stocks of home heating oil at historically low levels, and winter just around the corner, President Clinton issued an executive

<sup>7</sup>H. Rept. No 348-69, Pub. L. 106-291 (2000).

<sup>8</sup>DOE SPR website, at <http://www.fe.doe.gov/spr/spr-rik.shtml>.

order, pursuant to the limited drawdown authority under the EPCA, authorizing a “swap” of 30 million barrels from the SPR to alleviate a potential heating oil crisis.

Under the swap, 30 million barrels of SPR oil were released for bid. Interested parties bid to borrow quantities of not less than 1 million barrels of oil, and contracts were awarded based on how much oil bidders offered to return to the SPR between August 1 and November 30, 2001. “[B]idders based their offers on their best models of what it would cost them to acquire replacement crude, weighed against the benefit to them of having additional supply at the beginning of the winter.”<sup>9</sup>

After the release, according to the Congressional Research Service (CRS), “it may have been that U.S. willingness to use the SPR temporarily took the wind out of the speculative element in the futures market,” and spot prices fell from about \$37 to \$31 per barrel.<sup>10</sup> It is unclear, however, whether other political and economic factors also contributed to the price decrease.

Figure II-1 shows the price of crude oil before and after the two major releases of oil from the SPR, the 2000 swap and the 1991 emergency drawdown.

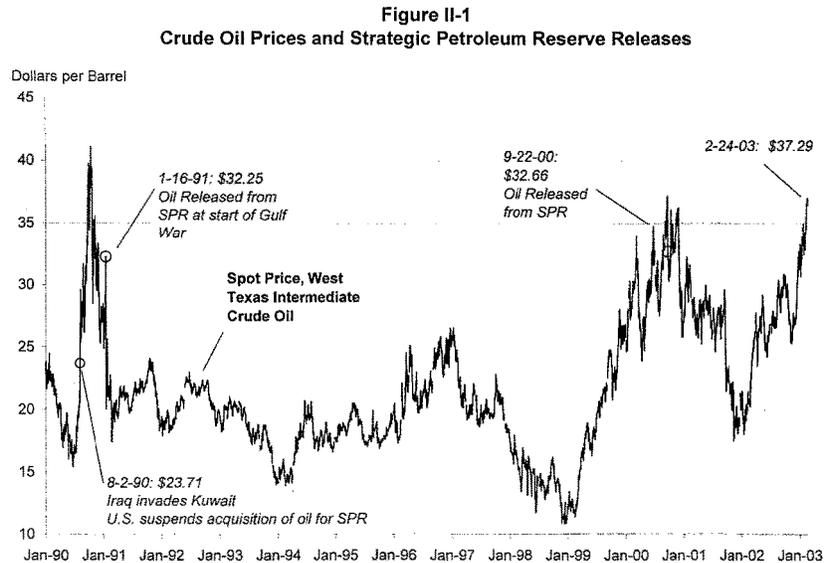


Fig. II-1. Major releases from the Strategic Petroleum Reserve occurred in 1991 and 2000. Price data obtained from EIA; release dates from Congressional Research Service.

<sup>9</sup> Robert Bamberger, CRS Report, *Strategic Petroleum Reserve*, June 26, 2002.

<sup>10</sup> *Id.*

### C. Filling the SPR

#### 1. Initial Fill of the SPR

From the mid-1970's until 1995, when the initial fill of the SPR was completed, 592 million barrels of crude oil were placed in the SPR. As of the end of FY 1997, the cumulative cost of the crude oil purchased to supply the SPR was nearly \$16 billion. Table II-1 shows the sources of oil deposited into the SPR through 2001:

**Table II-1**  
**Sources of Crude Oil Deposited into the SPR Through 2001**

Source	Quantity (millions of barrels)	Percent of Total
Mexico	266.2	41.2
North Sea (U.K.)	154.7	23.9
United States	52.4	8.1
Saudi Arabia	28.1	4.3
Libya	23.8	3.7
Iran	20.0	3.1
UAE	18.4	2.8
Nigeria	15.8	2.4
Norway	11.9	1.8
Venezuela	10.2	1.6
Oman	9.0	1.4
Egypt	8.9	1.4
Other*	26.9	4.2
<b>Total Receipts</b>	<b>646.3</b>	<b>100</b>

\* Contributions of 1% or less of the total from the following countries: Ecuador, Algeria, Cameroon, Iraq, Gabon, Qatar, Angola, Colombia, Peru, and Argentina.

Source: Department of Energy

From 1995 through 1998, the total inventory of crude oil in the SPR declined due to the sale of crude oil from the SPR and, with a ballooning Federal deficit and relatively stable crude oil supplies,

new expenditures were postponed and alternative methods of adding crude oil to the SPR explored.

## 2. Recent and Current Programs to Fill the SPR

Recently, DOE has been depositing crude oil into the SPR under three programs: (1) contracts to replace the 30-million barrels released in the fall of 2000; (2) contracts under the 1999 Royalty-in-Kind (RIK) program designed to replace the 28 million barrels withdrawn in the 1996 sales; and (3) contracts to deliver additional crude oil under the RIK program pursuant to the President's November 2001 announcement to fill the SPR to 700 million barrels. These programs are listed in Table II-2 and described below.

**Table II-2**  
**Current Programs to Fill the SPR**

<b>Program</b>	<b>Total Quantity to be Deposited (millions of barrels)</b>	<b>Initial Duration</b>	<b>Current Completion Date</b>
1999 RIK	30.7	2Q 99 – 1/03	1/2004
2000 Exchange Contracts (BP, Koch, Marathon, Vitol, Shell, Hess, Burhany, Elf)	34.5	12/01 – 1/03	1/2004
2002 RIK (Shell)	18.6	4/02-4/03	1/2004
2002 RIK (Koch)	8	10/02-4/03	1/2004
2003 RIK (Chevron/Texaco, Shell, ExxonMobil)	21	5/03-10/03	10/03
2003 Direct Fill (Texas offshore producers)	3.6	4/03-12/03	12/03

*Source of SPR information: DOE SPR website.*

### a. 2000 Swap Refill

Under the original schedule for returning the 30 million barrels of crude oil taken from the SPR in the September 2000 swap, these barrels were to be returned between August 1 and November 30, 2001. In late March 2001, DOE renegotiated the schedule for the return of 24 million of these barrels. Under the new schedule, the return of these 24 million barrels would occur between December 2001 and January 2003, and the companies returning the oil would provide a total of 3.5 million additional barrels to compensate the SPR for the schedule extension. As of February 2003, about 28 mil-

lion of these barrels have been returned. An additional 6 million barrels are scheduled to be returned in 2003.

#### **b. 1999 Royalty-In-Kind (RIK) Program**

In order to avoid additional Federal outlays for the purchase of crude oil to fill the SPR, in 1999, the Clinton Administration initiated the royalty-in-kind (RIK) program.<sup>11</sup> Traditionally, the Federal Government, through a program managed by the Department of Interior's Minerals Management Service (MMS), has collected royalty fees, in cash, for crude oil produced from offshore crude oil and gas wells operating under leases on the federally-owned Outer Continental Shelf. Under the RIK program, the Federal Government obtains crude oil for the SPR as "in-kind" royalties—rather than financial payments—from these oil leases. This allows the Federal Government to fill the SPR without using appropriated funds to purchase the oil.

To begin the RIK process, the MMS announces a bidding competition for the transportation of royalty oil that will be due to the Federal Government from the crude oil produced on tracts leased by the Federal Government in the Gulf of Mexico.<sup>12</sup> This competition is essentially a bidding contest for the transportation of the royalty oil from the company's wellhead in the Gulf to the "market center" designated by the MMS. Generally, the successful bidder will be the company offering the MMS the largest portion of the oil delivered to the market center, and taking the least amount of the oil itself as payment for the transportation of the oil to the center.

Because the royalty oil from the Gulf of Mexico leases is not of sufficient quality to be deposited in the SPR, DOE runs an additional, separate competition for contracts to exchange the royalty oil in the market centers for crude oil to be delivered to the SPR. The competition calls for bidders to take the royalty oil at the market center, swap it for oil suitable for the SPR, and then transport the SPR-suitable oil to the SPR. Generally, the successful bidder will be the company that promises to deliver the most barrels into the SPR in exchange for the royalty barrels taken from the market center.

Because a variety of crude oils are acceptable to place in the SPR, the DOE may also consider the quality of the crude oil offered to be placed into the SPR as a factor in determining which bid to select.<sup>13</sup> The quality of the oil to be deposited may be of particular significance when the leading bidders are offering approximately the same volumes to be deposited.

In 1999, the RIK program was adopted as a means to refill the SPR for the 28.1 million barrels withdrawn during the 1996 sales, without additional Federal outlays. The refills under this program began in the spring of 1999, and were to continue through January 2003, by which time the SPR was to have received a total of 30.7 million barrels.

<sup>11</sup>The RIK program is described in the DOE's Office of Fossil Energy website at <http://www.fe.doe.gov/spr/spr-rik.shtml>.

<sup>12</sup>The sale is based on a competitive bidding process. If the minimum bid price is not met, MMS will have the option to negotiate prices with the highest bidder. <http://www.mrm.mms.gov/RIKweb/PDFDocs/51626.pdf>.

<sup>13</sup>Interview with DOE officials by Subcommittee staff on June 12, 2002.

Although the RIK program enables the SPR to be filled without Federal outlays, using RIK oil for the SPR program nonetheless affects the Federal budget. The exchange of royalty oil for SPR oil deprives the Federal treasury of revenues that otherwise would have accrued had the MMS sold the royalty oil on the open market. Exchanging royalty oil for SPR oil when oil prices are high, therefore, results in a greater loss to the Treasury than exchanging royalty oil for SPR oil when oil prices are low. Hence, to the extent that the SPR program uses RIK oil when prices are high rather than low, taxpayers pay higher costs for the SPR, just as if the crude oil placed in the SPR had been bought on the open market at those high prices.

**c. 2001 RIK Program to Fill the SPR to 700 Million Barrels**

The increased national security concerns and falling crude oil prices that followed the terrorist attacks on the United States in September 2001, led both the Congress and the Administration to support filling the SPR to capacity. In October 2001, the House of Representatives passed a resolution supporting the filling of the SPR to its maximum authorized level of 1 billion barrels.<sup>14</sup> In April 2002, the Senate passed an energy bill that included language to permanently authorize the SPR and require DOE to fill to its current capacity of approximately 700 million barrels.<sup>15</sup>

In November 2001, President Bush announced the Administration's intent to fill the SPR to its current 700 million barrel capacity.<sup>16</sup> In the announcement, the President directed the Secretary of Energy to fill the SPR "in a deliberate and cost-effective manner."<sup>17</sup> In a contemporaneous DOE press release, DOE stated, "The President's decision will expand an ongoing 'royalty-in-kind' program, adding oil to the Reserve in a deliberate and cost-effective manner at rates of up to 130,000 barrels per day beginning [in 2002]."<sup>18</sup>

On January 22, 2002, DOE announced a solicitation for bids to exchange up to 22 million barrels of royalty oil for oil to fill the SPR.<sup>19</sup> "Because Strategic Reserve crude oil typically exceeds the quality of most offshore crudes," DOE stated, "companies will likely deliver somewhat less than the 22 million barrels of royalty oil to the Reserve after adjusting for the quality differences. The companies can also make adjustments to account for their costs to deliver oil to the Reserve sites. The Energy Department will negotiate contracts with the companies that offer the ratios most favorable for the U.S. Government."<sup>20</sup>

<sup>14</sup>H.Res. 250, 107th Cong., 1st Sess., A Resolution Urging the Secretary of Energy to Fill the Strategic Petroleum Reserve.

<sup>15</sup>The Senate passed the energy bill, H.R. 4, on April 25, 2002, but it was never enacted into law.

<sup>16</sup><http://www.fe.doe.gov/spr/spr-rik.shtml>.

<sup>17</sup>President Orders Strategic Petroleum Reserve Filled, Statement by the President, at <http://www.whitehouse.gov/news/releases/2001/11/20011113.html>.

<sup>18</sup>DOE Press Release, *President Directs Energy Secretary to Increase Strategic Reserve*, November 13, 2001.

<sup>19</sup>DOE Press Release, *Energy Department Opens Bid Process to Begin Filling Strategic Oil Reserve*, January 22, 2002.

<sup>20</sup>*Id.*

On February 6, 2002, DOE awarded this RIK contract to Equiva Trading Company, which has since become part of Shell. Under this contract, Equiva agreed to deliver 18.6 million barrels of sweet crude oil to the SPR through the RIK program between April 1, 2002, and May 1, 2003.<sup>21</sup> This contract translates to a fill rate of approximately 60,000 barrels per day. Publicly announcing the award 5 days later, on February 11, 2002, the Secretary of Energy stated, “Today’s announcement is another step forward in the President’s efforts to strengthen the nation’s energy security. . . . The Strategic Petroleum Reserve is one of our most important strategic assets, and today’s action ensures that we will be prepared for potential supply disruptions in the future.”<sup>22</sup> Shell began delivery of oil to the SPR under this contract in April 2002.

In late July 2002, DOE announced a new RIK contract solicitation to increase the fill rate by about 40,000 barrels per day. “More oil in the Reserve is more energy insurance for American consumers,” the Secretary of Energy stated. “And the faster we can add oil to the Reserve, the more energy security we can provide for all Americans.”<sup>23</sup> On August 11, 2002, DOE announced that Koch Supply and Trading had won the bidding for this contract. Under the contract, Koch agreed to supply approximately 8 million barrels of crude to the SPR, with deliveries beginning October 1, 2002, and running through April 30, 2003.<sup>24</sup>

On February 10, 2003, DOE announced the award of three new contracts to place, on average, another 116,000 barrels per day into the SPR over a 6-month period beginning in May 2003. On the same date DOE also announced that in April it would begin pumping about 15,000 barrels per day of crude from producers off the Texas coast into the SPR. According to DOE, “The combined shipments will boost the Strategic Petroleum Reserve’s fill rate to approximately 131,000 barrels per day—the fastest since President Bush announced plans in November 2001 to fill the Reserve to its full 700-million barrel capacity. . . .”<sup>25</sup> The contracts announced in February will add another 24 million barrels to the SPR between April and October, 2003.

As of the writing of this Report in March 2003, the total volume of oil stored in the SPR is about 600 million barrels. As shown in Figure II-2, this total includes the steady addition of over 40 million barrels of oil from November 2001 through September 2002.

<sup>21</sup> DOE anticipates that after this contract terminates in 2003, subsequent RIK contracts will specify that two-thirds of the oil deposited under the contract be sour crude and one-third be sweet crude. DOE interview with Subcommittee staff.

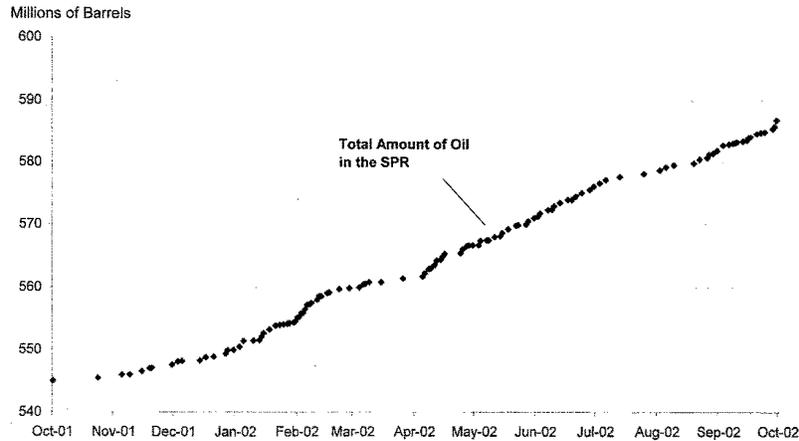
<sup>22</sup> <http://www.fe.doe.gov/techline/tl—sprrik2002—equiva.shtml>.

<sup>23</sup> Fossil.Energy.gov Techline, *Administration to Increase Fill Rate of Strategic Petroleum Reserve*, July 26, 2002, at <http://www.fe.doe.gov/techline/tl—spr—rik2002—phase2.shtml>.

<sup>24</sup> Office of Fossil Energy website, at <http://www.fe.doe.gov/spr/spr—rik.shtml>.

<sup>25</sup> DOE, *New Contracts Awarded for Planned Spring Acceleration of Oil Fill for Strategic Petroleum Reserve*, February 10, 2003, at <http://www.fe.doe.gov/techline/tl—spr—rik2003—sel.shtml>.

**Figure II-2**  
**Total Amount of Oil in the SPR**  
**October 2001 - September 2002**



**Fig. II-2.** Beginning in November 2001, and continuing through late 2002, DOE deposited oil into the SPR at a steady rate. SPR data provided by DOE.

Current SPR contracts call for depositing an additional 43 million barrels in 2003, at a steady rate of over 130,000 barrels per day. Table II-3 provides the current monthly schedule for future SPR deliveries.

**Table II-3**  
**2003 SPR Delivery Schedule**

Month	Scheduled Deposits (barrels)
April	3,934,000
May	4,622,000
June	5,304,000
July	6,029,000
August	5,473,000
September	7,181,000
October	5,772,000
November	1,500,000
December	2,758,000
January 2004	1,582,000

Source: DOE SPR website, Current Inventory, SPR Delivery Schedule as of March 03, 2003, Last Updated 3/3/2003

### 3. Strategy for Filling the SPR

#### a. Different Types of Crude Oil May Be Placed in the SPR

For each of the two basic types of crude oil stored in the SPR—sweet and sour crudes—DOE allows SPR contractors to deposit a variety of crude into the reserve, as long as they meet DOE's minimum standards for that specific type of crude oil. Providing contractors with flexibility in the types of crude oil that can be delivered to the SPR is one measure taken by the SPR program to minimize costs and market disruptions. Table II-4 shows the thirteen different types of oil that meet DOE's specifications for sweet crude oil:

**Table II-4**  
**Sweet Crude Oils That Meet SPR Specifications**

Crude Type	Country	API Gravity*	Percent Sulfur (by weight)
Saharan Blend	Algeria	39	0.30
Forties	U.K.	39	0.35
Brass River	Nigeria	38	0.35
Bonny Light	Nigeria	37	0.35
Ekofisk	Norway	36	0.35
Escravos	Nigeria	36	0.35
Oseberg	Norway	32	0.35
Cusiana	Colombia	36	0.40
Brent	U.K.	36	0.42
LLS	U.S.	35	0.42
HLS	U.S.	33	0.42
Qua Iboe	Nigeria	32	0.42
Kole	Cameroon	n/a	n/a

\* A lower API gravity number indicates a heavier crude oil. Generally, heavier crudes with more sulfur are less expensive than lighter crudes with less sulfur.

Source: DOE

Although DOE provided its SPR contractors with the option to deposit a variety of sweet crudes into the SPR, from the fourth quarter of 2001 through the first half of 2002, oil companies chose to deposit into the SPR large amounts of Brent crude oil, a crude

oil dwindling in supply and the price of which serves as a benchmark for the price of other crude oils.

Figure II-3 shows the breakdown between Brent and other sweet crudes deposited into the SPR from April 1999, when the filling of the SPR recommenced under the 1999 RIK program, through September 2002. This investigation's findings regarding the significant consequences arising from these large deposits of Brent crude oil into the SPR, including the effect upon global crude oil markets and crude oil prices in the United States, are explained in Section IV.

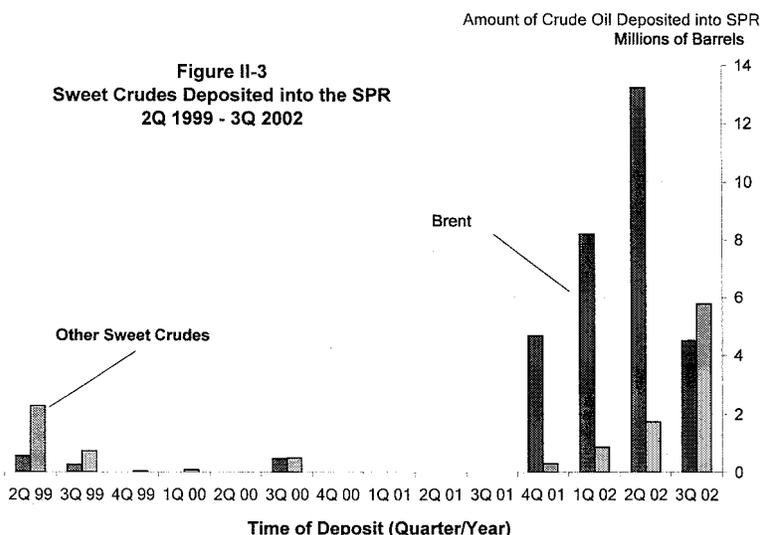


Fig. II-3. From the 4th quarter of 2001 through the 2nd quarter of 2002, large amounts of Brent were used to fill the SPR. SPR data provided by DOE.

### b. Market-Based Acquisition Strategy and Fill Schedules

DOE solicitations for oil to be deposited into the SPR provide a general time period for the delivery of the oil to the SPR. After a solicitation is awarded, the contractor proposes a more specific schedule of deliveries. DOE and the contractor then establish a mutually acceptable schedule.<sup>26</sup>

The SPR program's "Business Procedures," Exhibit II-1, most recently issued in January 2002, provide DOE and SPR contractors flexibility to modify delivery schedules, either by deferring or accel-

<sup>26</sup>Typically, after a SPR fill contract is awarded, DOE will delay for several days the public announcement of the winning bidder in order to allow the winning bidder to prepare to implement the contract prior to the market learning of the general requirements of the contract. Even after publicly announcing the award of a contract, DOE withholds significant information from the market to ensure that persons other than the contract participants do not obtain advance knowledge of SPR purchase and shipping schedules. DOE also withholds details about the various bids received, why a certain bidder won, and the specific delivery schedule under the contract. DOE reveals only who the winning bidder is, and how much oil will be delivered into the SPR on a monthly basis. DOE withholds this contract, delivery, and bid information in part to prevent actions by crude oil market participants that could increase a contractor's transportation costs or "squeeze" the contractor by bidding up the price of oil suitable for the SPR.

erating deliveries, depending on market conditions.<sup>27</sup> DOE has publicly stated that it used these business procedures to deposit more oil into the SPR when crude oil markets are “weak,” and delay deliveries when the markets are “strong,” both to minimize SPR program costs and to help stabilize crude oil markets.

If a contractor asks to defer or advance a shipment, DOE will require the contractor to compensate DOE for any loss in value from the change in schedule. The SPR Business Procedures state:

During contract performance there may be situations when due to programmatic requirements or through contractor request the schedule for the delivery of exchange oil to the SPR sites are proposed to be deferred to a later date or accelerated to an earlier date. An evaluation is performed incorporating a formula that encompasses market conditions including crude oil prices from contracted delivery period to the revised delivery period, time value of money, and crude type differentials. Based on this evaluation negotiations are conducted with the contractor [and DOE personnel]. Based on the negotiated agreement a bilateral modification is executed [by DOE] and the contractor incorporating the revised delivery schedule; [and] any additional premium barrels owed by the contractor as a result of the agreement. . . .<sup>28</sup>

According to a September 2001 presentation, Exhibit II–2, prepared by the SPR Office for other countries considering establishing a crude oil reserve program, “the key to a successful strategic reserve is cost control.”<sup>29</sup> Because “the number and extent of future disruptions is unknown,” and “measuring the degree of damage from a disruption, and the consequent benefits of a petroleum reserve, to an individual economy is an uncertain science,” DOE states that “cost is the easiest aspect to control and has the highest probability of making the Reserve cost beneficial.” According to the presentation, the major costs for the SPR program are the capital costs to construct the facility, the costs to operate and maintain the Reserve, and the costs of acquiring the oil for the Reserve.

According to the same presentation, DOE follows four market-based principles when filling the SPR. In a chart entitled, “Lessons Learned to Control Oil Acquisition Costs,” DOE describes these principles as follows:

- Let the markets determine your buying pattern.
- Buy in weak markets.
- Delay deliveries during strong markets.
- Use your acquisition strategy to stabilize markets.<sup>30</sup>

By calling them “Lessons Learned,” DOE indicates that these principles were developed as a result of previous program experience.

<sup>27</sup> Strategic Petroleum Reserve, *Business Procedures, Crude Oil Exchanges*, January 2002; Exhibit II–1.

<sup>28</sup> *Id.*, at page 6.

<sup>29</sup> Presentation by John Shages, DOE Office of Strategic Petroleum Reserve, Asia-Pacific Economic Cooperation Energy Working Group, Workshop on Energy Security Policy, Sept. 14–15, 2001; Exhibit II–2.

<sup>30</sup> *Id.*

Essentially, they direct DOE to buy more oil when current market prices are low, and less when oil prices are high.<sup>31</sup>

In 2000 and 2001, DOE regularly followed these market-based principles. For example, in March 2001, DOE postponed the delivery of 24 million barrels of crude oil then scheduled to be delivered between August and November 2001, until sometime between December 2001 and January 2003. In return for the delay, DOE obtained an additional 3.5 million barrels. According to the Congressional Research Service, “It is believed that the schedule was renegotiated to keep pressure off crude markets, and to keep this volume of oil in the private sector where it can be tallied in industry stocks going into the winter of 2001–2002.”<sup>32</sup> The available futures market data indicates that at the time of DOE’s decision, crude oil futures markets were backwardated, meaning near-term prices were greater than longer-term prices.

Similarly, the original schedule for the 1999 royalty-in-kind program called for delivery of just over 27 million barrels to the SPR throughout the year 2000. DOE obtained an additional 3.6 million barrels in return for extending the delivery schedule to run through 2002.

In total, these two extensions resulted in an additional 7 million barrels for the SPR, at no additional taxpayer cost. Based on the average spot price of crude oil in 2002 at \$26 per barrel, these deferrals reduced SPR costs by over \$175 million.<sup>33</sup>

### c. SPR Market-Based Procedures Abandoned

In February 2002, DOE abandoned its market-based business procedures, and instituted a policy of denying all requests for deferrals of scheduled SPR deposits, regardless of market conditions. The decision to stop granting requests for deferrals, regardless of the price of oil, was announced by the Secretary of Energy after consulting with White House and other high-ranking Administration officials. SPR career officials warned that this change in strategy would lead to lower commercial crude oil inventories and higher prices, and unsuccessfully recommended a return to a market-based program.

Sections IV and V of this Report detail the consequences of the no-deferral policy that was adopted in 2002. Section IV explains how the refusal to grant deferrals in early 2002 led to a squeeze in the market for Brent crude oil, which in turn led to price spikes in the U.S. crude oil market, costing American consumers and businesses between \$500 million and \$1 billion in 1 month alone. Section V describes the concerns of the SPR career officials regarding the new no-deferral policy, and how the Administration’s market-blind policy also led to higher crude prices and lower commercial inventories, resulting in no net increase in national oil supplies.

<sup>31</sup>More precisely, the terms “weak” and “strong” market appear to refer to when the market is in contango (near-term prices lower than longer-term prices) or in backwardation (near-term prices higher than longer-term prices), respectively. See also internal SPR memorandum, Exhibit V-4.

<sup>32</sup>Robert Bamberger, CRS Report, *Strategic Petroleum Reserve*, June 26, 2002.

<sup>33</sup>See Exhibit V-4. DOE’s calculation of savings are based upon an average price of \$25 per barrel. This is a slight underestimation, since the average spot price for WTI in 2002 was just over \$26 per barrel, which means taxpayer savings were actually closer to \$180 million.

### III. THE PRICING OF CRUDE OIL

*“Leon Hess, whose oil company made more than \$200 million by trading oil futures during the Persian Gulf crisis . . . said he longs for the days when oil company barons could get together and decide prices and supply levels largely among themselves, rather than depending on the violent price swings created by traders who react to rumors and headlines.*

*“I’m an old man, but I’d bet my life that if the Merc [New York Mercantile Exchange] was not in operation there would be ample oil and reasonable prices all over the world, without this volatility,” Hess said at a hearing the Senate Committee on Governmental Affairs held on the role of futures markets in oil pricing.”*

*—“Oil Baron Longs for Past, Not Futures,” Newsday, November 2, 1990*

In 2002, the price of crude oil in the United States nearly doubled, climbing from \$18 per barrel in January to over \$34 per barrel in December. Since then, crude oil prices continued to climb and recently reached a 12-year high of nearly \$40 per barrel.<sup>34</sup> Gasoline, home heating oil, jet fuel, and diesel fuel prices also have increased dramatically over this period.

To understand how filling the SPR became a major factor driving up oil prices, it is first necessary to understand how crude oil prices are determined in today’s markets.

The crude oil market is the largest commodity market in the world. The nations of the world consume approximately 70–80 million barrels of crude oil each day. To meet that demand, each day, hundreds of millions of barrels are traded on the crude oil spot, futures, and over-the-counter markets, with several times the world’s production of crude oil traded daily on the New York and London futures exchanges, and contracts worth hundreds of millions of dollars traded daily on the over-the-counter markets. The United States is the single largest consumer of crude oil, consuming about one quarter of the world’s production of crude oil, amounting to about 18 million barrels per day. The United States is also the largest crude oil purchaser and importer, importing about 60 percent of its oil needs, or about 10 million barrels per day. In the United States, most of this crude oil, approximately 90 percent, is refined into fuel products, such as gasoline, home heating oil, jet fuel, and diesel fuel.

Crude oil prices today are heavily influenced by producers, consumers, and traders buying and selling oil contracts or related fi-

<sup>34</sup>The price of West Texas Intermediate crude oil on the New York Mercantile Exchange reached \$39.99 on February 27, 2003.

nancial instruments in various markets for crude oil. The development of a market-based system for determining the price of crude oil is a relatively recent advance in the petroleum industry.<sup>35</sup> Prior to the mid-1970's, crude oil prices were largely determined by fiat by a few large oil companies dubbed the "Seven Sisters." Following the nationalization of many of the Middle Eastern oil fields owned by these companies and the rise in power of the Organization of the Petroleum Exporting Countries (OPEC) cartel, crude oil pricing shifted from private companies to OPEC, which effectively controlled global prices from the mid-1970's until the mid-1980's. A variety of political and economic factors, including falling demand for crude oil and rising production by non-OPEC members, precipitated a collapse of the OPEC administered pricing system in the mid-1980's and the development of a market-based pricing system.

Nearly all commodity and financial markets have changed significantly since the mid-1980's, largely as a result of the revolutions in computer, communications, and information technology. The crude oil markets are no exception. Over the past 20 years, trading volumes on the crude oil futures exchanges have greatly increased, and in the past few years electronic over-the-counter (OTC) markets have emerged to rival the traditional futures markets.

This section of the Report provides an overview of the crude oil markets, including the spot, futures, and OTC markets. It describes the three "benchmark crudes," which are used as a basis for the price of crude oils sold around the world, the major types of contracts by which crude oil is now sold and purchased, and the pricing mechanisms and related financial instruments that are now commonly used in futures and OTC markets. This section also outlines the varying degrees of regulation of the different crude oil markets in the United States, contrasting the extensive regulation of the futures exchanges with the near absence of regulation of trading in OTC markets.<sup>36</sup>

This section also describes in greater detail the markets for the three crude oils that serve as price benchmarks for all other types of crude oil—Brent, West Texas Intermediate (WTI), and Dubai. Additional detail is provided about the Brent market, including how the Brent spot, futures, and OTC markets interact and affect each other's prices. The section also describes how the so-called "Arcadia squeeze" of the Brent market in 2000 dramatized the Brent market's susceptibility to manipulation. This vulnerability continued for the next 2 years, until Brent market corrections were made in mid-2002.

Understanding the Brent market, its vulnerability to squeezes, and its relationship to other crude oil markets, such as the U.S. market for WTI, is critical to understanding how depositing significant amounts of Brent into the SPR in late 2001 and the first half of 2002 became a major factor driving up crude oil prices in the United States.

<sup>35</sup> See, e.g., Robert Mabro, *Oil Markets and Prices*, Oxford Institute for Energy Studies, Monthly Comment, August 2000.

<sup>36</sup> More detailed information on the regulation of commodity markets, including the crude oil markets, is provided in Appendices 1 and 2.

## A. Overview of Crude Oil Markets

Crude oil prices are largely determined by supply and demand conditions in the global oil market, reflecting numerous transactions between buyers and sellers taking place around the world.

Most of the world's crude oil is located within the boundaries of the countries belonging to OPEC, and OPEC has nearly all of the world's estimated excess production capacity. OPEC attempts to set an average global price for crude oil by establishing production quotas for its members and meets regularly to adjust these quotas in consideration of the global balance between supply and demand. Because of its market power, OPEC decisions about the supply of oil significantly affect world oil prices. Nonetheless, its efforts have met with varying degrees of success, as OPEC members often have conflicting objectives and do not always adhere to the quotas, and production by non-member countries has increased in recent years. Economists disagree as to the effectiveness of OPEC as a cartel.

Global price levels are also affected by the level of inventories of crude oil and petroleum products in oil-consuming countries. When inventories are high, supplies are more plentiful, and prices tend to fall. Lower inventories mean tighter market supplies, which, in turn, push prices upward to bring more oil into the market.

Oil prices also depend on the supply and demand for the various types of crude oil produced in different oil fields. Crude oil streams with a low sulfur content ("sweet" crudes) or that are less dense ("light" crudes) than heavier crude oils are easier to process into the more valuable refined products, such as gasoline. To efficiently process the heavier crudes into lighter products, refiners must install additional, expensive refining equipment. Generally, therefore, light, sweet crudes are more expensive than heavy, sour crudes. Different refiners have adopted different strategies as to whether to make significant capital investments for more processing equipment in order to refine the cheaper heavier, sour crudes, or whether to forego the capital expenditures and continue to pay a premium for light, sweet crude oil. The price differential between light, sweet crudes and heavy, sour crudes at any given time depends on the relative capacity within the refining industry for processing these two types of crudes, the supplies of these crude oils, as well as the relative demand for lighter and heavier refined products.

The global crude oil market consists, therefore, of a number of sub-markets for crude oil, which are influenced by the characteristics of those crude oil streams, and the supply and demand balance for those particular types of crude oil. The price for any particular crude oil stream may deviate by as much as several dollars per barrel from the OPEC target or the global average, depending on the quality of the crude oil, the supply and demand situation in that particular sub-market, and local political and economic factors.

Crude oils produced in the oil fields around the world are grouped into several hundred separate crude oil streams. Almost all of these crude oil streams are priced in relation to the prevailing market price of one of the three "benchmark" grades of crude oil—Brent crude oil produced in the North Sea territorial waters of the United Kingdom, West Texas Intermediate (WTI) produced near the U.S. Gulf Coast, and Dubai crude oil produced in

the Middle East. Typically, other crude oil streams are priced at either a premium or a discount to the relevant benchmark price, depending on the quality of the oil relative to the benchmark.<sup>37</sup> The benchmark used for a particular purchase will depend upon the type of crude oil being purchased and the location of the purchaser.

There are several different types of markets for crude oil and related financial products. Most of the crude oil that is purchased for delivery is done pursuant to either a fixed-term contract or on the “cash” or “spot” market. There are also two well-established futures markets for crude oil, the New York Mercantile Exchange (NYMEX) and London’s International Petroleum Exchange (IPE), but futures contracts rarely result in actual delivery of crude oil. The futures markets serve mainly to spread the risks of price volatility and for price discovery.

In addition, there is an extensive over-the-counter (OTC) market for various types of crude oil contracts and a host of related financial instruments. Many of these financial instruments, such as swaps, serve to spread financial risk and discover prices, in the same manner as futures contracts. OTC transactions either are negotiated directly between OTC market participants, over the telephone through brokers, or, increasingly, on electronic exchanges.

### **1. Term Contracts**

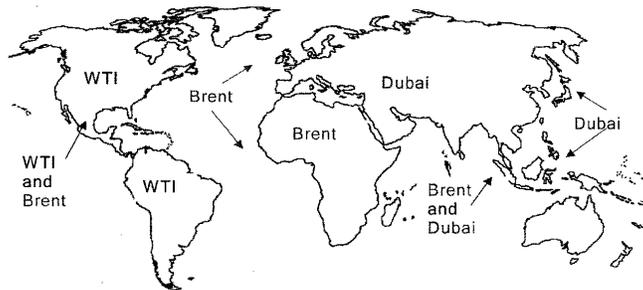
Much of the world’s crude oil is bought and sold using two-party “term contracts” covering multiple transactions over a specified length of time. These contracts specify the volumes to be delivered for the duration of the contract and fix the method for calculating the price of the oil. Although these contracts can cover as few as one shipment of oil or last as long as several years, they typically cover a number of shipments over a 1-year period, and provide an option for renewal upon expiration. The contracts may also provide for different amounts of crude oil to be delivered at different times in the contract period.

Term contract prices are usually tied to the price of one of the three benchmark crude oils, plus or minus a quality adjustment. Crude oil delivered into the U.S. Gulf Coast usually is priced in reference to the price of West Texas Intermediate (WTI) crude oil. Crude oil delivered into European markets or produced in West Africa usually is priced in reference to Brent crude oil. Crude oil delivered into Asia or the Middle East normally is priced in reference to the price of crude oil produced Dubai and Oman.

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<sup>37</sup> Benchmark pricing is discussed in more detail *infra*.

Figure III-1  
Crude Oil Benchmarks



Benchmark	Amount Priced off Benchmark
Brent	40-50 million barrels/day (bpd)
WTI	12-15 million bpd
Dubai	10-15 million bpd

Source of data: Platts, Petroleum Intelligence Weekly

Fig. III-1. Brent is the benchmark for two-thirds of the crude oil traded globally. WTI is the primary benchmark for crude oil bought and sold in the U.S.

Term contracts for the sale of crude oil priced in relation to a benchmark also typically contain a “quality adjustment,” which is a negotiated dollar amount reflecting the difference in quality between the oil being purchased and the quality of the benchmark oil. Most often, the value of the quality adjustment will be fixed for the duration of the contract. Crude oil purchased under a term contract is usually tied to the spot price of the specified benchmark at the time the seller loads the crude oil into a cargo ship for transport to the purchaser.

Term contracts are negotiated through face-to-face meetings, or by telephone and fax, and are customized to the particular needs of the contract participants. These contracts are not traded on regulated exchanges or over-the-counter.

## 2. Crude Oil Spot or Cash Market

The crude oil spot market, also known as the “cash” market, is not a formal exchange like the NYMEX but rather an informal network of buyers and sellers. The spot market provides a market to dispose of or buy an incremental supply of crude oil not covered by contractual agreements, in response to the market’s current supply and demand conditions. Rising prices on the spot market indicate that demand is high and more supply is needed, while falling prices indicate there is too much supply for the market’s current demand level.

A spot market transaction is an agreement to buy or sell one shipment of crude oil at a price negotiated at the time of the agreement. The crude oil may be delivered immediately, or it may be de-

livered at some specified time in the future, in which case the contract is also known as a “forward” contract. Typically, spot market transactions are priced at the time the crude oil is loaded at the terminal for shipment.

The spot prices of the three major benchmark crudes—Brent, WTI, and Dubai—serve as indicators for all of the crude oils bought and sold on the spot market. The spot price is typically guided by the prices of other recent spot transactions, as reported in *Platts* and other trade publications, and by reference to the futures prices quoted on the NYMEX for WTI or on the IPE in London for Brent.

Since the middle of the 1980’s, increasing amounts of crude oil have been bought and sold on the worldwide spot market. Before 1979, less than 3 percent of all crude oil traded worldwide was traded on the spot market. By 1989, it was estimated that about one-third of all crude oil was traded on the spot market.<sup>38</sup>

Term contracts and spot market transactions are the leading mechanisms for arranging for the physical delivery of crude oil. In the United States, term contracts and spot market transactions for crude oil are commercial transactions subject to state and Federal law. Because neither type of transaction is considered a contract for future delivery, neither is subject to regulation under the Commodity Exchange Act (CEA), which regulates contracts for future delivery. Although the CEA makes it illegal to manipulate “the market price for any commodity,” in practice the Commodity Futures Trading Commission (CFTC) will scrutinize spot market transactions only in connection with an investigation of alleged misconduct involving the futures market. In short, crude oil term contracts and spot transactions are important mechanisms for the delivery of crude oil yet are not subject to commodity market regulation.<sup>39</sup>

### 3. Crude Oil Futures Markets

While term contracts and spot transactions involve the trade of physical barrels of oil for immediate or deferred delivery, the futures markets involve the purchase and sale of contracts for the future delivery of crude oil. A “futures contract” is a standardized contract by a buyer to accept and a seller to deliver a given quantity of a particular commodity at a specified place, price, and time in the future. For example, the standard crude oil futures contract traded on the NYMEX specifies 1,000 barrels of WTI crude oil to be delivered at Cushing, Oklahoma, at a specified date in a future month.<sup>40</sup> By law, futures contracts generally must be traded on regulated commodity exchanges.<sup>41</sup>

Rather than provide a mechanism for the actual delivery of physical volumes of crude oil, however, the primary purposes of futures

<sup>38</sup> General Accounting Office, GAO/RCED-93-17, 37; *Platts Oilgram Price Report*, November 28, 2001; and DOE/EIA.

<sup>39</sup> Subcommittee interview with CFTC staff.

<sup>40</sup> The contract actually provides for the delivery of several types of domestic and foreign crude oil streams, with either a discount or premium per barrel based on the specific crude the seller delivers. The standard NYMEX light sweet crude contract lists the specifications of the deliverable grades of crude oil with the specified discounts and premiums. This contract may be traded within a 30-month period prior to the date of delivery specified in the contract for the oil. NYMEX also offers standard light, sweet crude contracts for delivery of WTI crude oil 3, 4, 5, 6, and 7 years into the future.

<sup>41</sup> Exceptions to this general rule are discussed later in this Section and in Appendix 2.

contracts are to allow market participants to spread the risk of price volatility and to provide a mechanism for price discovery. Indeed, one of the major differences between a forward contract and a futures contract is that in the former delivery is intended whereas in the latter it is not.<sup>42</sup>

The first function of a futures contract, risk spreading, occurs as producers and consumers buy or sell futures contracts that fix the price of future purchases or sales and thereby reduce the risk of price volatility and uncertainty prior to delivery. For example, a producer of crude oil may be concerned that the price of crude may fall in the future. At the same time, a refiner may be concerned that the price of crude may rise. By entering into a futures contract that fixes the price of crude oil to be delivered in the future, both the producer and the refiner can protect themselves against adverse price movements. Alternatively, a speculator may be willing to enter into a futures contract with either a producer or a refiner and be willing to bear the risk of a price movement in return for the possibility of speculative gains from those price changes.

A broad range of participants in the oil industry use the futures markets. In addition to crude oil producers and refiners, oil trading firms, petroleum-product end users, financial institutions, and investment funds also account for significant trading volume. For example, a number of airlines use crude oil futures to hedge the cost of jet fuel. A number of investment banks use crude oil and other energy-related futures to hedge against changes in energy costs, which affect many of their other investments.

Figure III-2  
Participants in NYMEX Crude Oil Futures

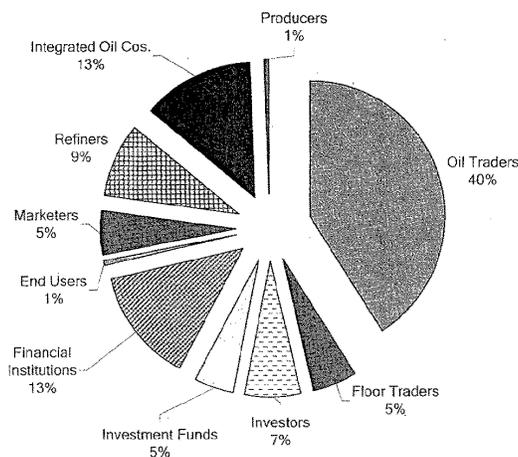


Fig. III-2. Ownership of outstanding NYMEX crude oil futures contracts, by market sector, January - October 2000. Source of data: NYMEX.

<sup>42</sup> See *Commodity Futures Trading Comm. v. Co Petro Marketing Group, Inc.*, 680 F.2d 573 (9th Cir. 1982).

The second function of the futures market, price discovery, occurs as market participants bring to the marketplace their knowledge of current supply and demand conditions and their expectations about the future. Prices change frequently as the participants revise or reevaluate their expectations on the basis of new information, and buy and sell futures contracts in accordance with those expectations. As a futures contract approaches the delivery date, the price of the first forward month should approach the spot price.

### **Basic Terms Used in Futures Markets:**

A purchaser of a futures contract that provides for delivery of a commodity to the holder of the contract at a future date is said to be **long** in the commodity. The holder of a futures contract that requires the contract holder to deliver the commodity at a future date is said to be **short** in that commodity. At any given time, the number of shorts must exactly balance the number of longs. Because futures contracts are not generally used to obtain or deliver actual commodities, holders of futures contracts generally will **square out** their positions (i.e., buy back from the market the amount of the commodity that previously had been sold, or sell back to the market that which previously had been bought) before the **expiry** of the contract, meaning the date on which the contract expires, at which time the remaining holders of outstanding contracts will be required to accept or make physical delivery of the commodity. See, e.g., Chicago Board of Trade, *Agricultural Futures and Options* (1998).

### **Standardized Contracts**

The standardization of futures contracts facilitates the trading of these contracts, which is one of the major advantages of purchasing a contract that can be traded on an exchange. Typically, to execute a trade involving a standardized futures contract on an exchange, the only contractual term that must be negotiated for the sale or purchase of that contract is the price. On a commodities exchange, this takes place through either the open outcry system, which is the traditional system of traders and brokers signaling and shouting to each other bids and offers in trading pits located on the exchange floor, or through an electronic exchange, where the bids and offers are posted and matched electronically, without any face-to-face contact between the parties or their brokers. The NYMEX uses the open outcry system for trading crude oil and other commodity contracts, whereas the IPE plans to discontinue pit trading and switch to all-electronic trading.

Because the contracts are standardized, a single futures contract can be traded many times before the delivery date specified on the contract, each time at a new price as the market's supply and demand situation changes. Since futures contracts rarely are used to obtain or make physical delivery, the volume of crude oil traded under these contracts can far exceed the actual available volumes of the underlying commodity. In fact, in recent years the total volume of crude oil represented in open NYMEX light sweet crude oil contracts typically has been over 110 times the daily production of

all crude grades deliverable under the contract.<sup>43</sup> On average, less than one-tenth of 1 percent of these oil futures contract results in the actual delivery of crude oil. For example, over the 7 years that the December 2001 NYMEX light sweet crude oil contract was traded, 5 billion barrels were traded, but only 31,000 barrels were actually delivered on those contracts.<sup>44</sup>

Futures trading of crude oil on NYMEX began in 1983, and today the volume of the WTI crude oil futures contract traded on the NYMEX is the largest of any physical commodity traded in any futures market. For example, in 2001, over 37.5 million crude oil futures contracts—each for 1,000 barrels of WTI crude oil—were traded on the NYMEX.<sup>45</sup> Although the NYMEX also offers a futures contract for Brent crude oil, trading in this contract remains limited. The majority of futures contracts for Brent crude oil are traded at the IPE in London.

### **Exchange Membership and Clearinghouse**

A commodity futures exchange like the NYMEX is similar to a stock exchange in that it is an association of members who own seats on the exchange and who can trade on the exchange. The members of an exchange generally fall into several categories: the commercial producers and purchasers of the commodities traded on the exchange, speculators, and brokers. Members may trade on the exchange for their own account or for others; nonmembers must trade through brokerage firms.

A key feature of an exchange is a clearinghouse, which is operated by or on behalf of the exchange. Generally, a number of firms that are members of the exchange own and operate the clearinghouse. In addition to keeping track of all the trades that occur on the exchange each day, all trades must be cleared through the clearinghouse, and the clearinghouse guarantees performance on all the contracts traded on the exchange. When two customers buy and sell futures contracts on an exchange, each of their brokers actually conducts the transaction through the clearinghouse rather than by bringing the customers together. In effect, the clearinghouse acts as a party to every transaction. Thus, when customers want to sell back or buy back futures contracts, they do not need to find the original counterparty; rather they need only find another party interested in a new transaction, and the trade is again conducted through the clearinghouse.

To guarantee contract performance, the members of the clearinghouse deposit funds into the clearinghouse. The rules of the exchange also require brokers trading through the clearinghouse and their customers to post deposits or “margins,” related to the value of the positions taken in their trades, to cover any losses that may occur. At the end of each day of trading these margin accounts are “marked-to-market”—the exchange collects money from accounts that have lost value and credits those accounts that have gained value—so that sufficient funds to guarantee performance are on de-

<sup>43</sup> Information provided to Subcommittee staff by NYMEX.

<sup>44</sup> *Id.*

<sup>45</sup> *Id.* In addition to the trade in futures contracts, options to buy or sell futures contracts are also traded on the NYMEX. Options also are popular instruments used for hedging and speculating. For simplicity, the following discussion refers only to futures.

posit at all times. In this manner, “counterparty risk”—the risk that the other party to a trade will default on performance—is virtually eliminated.

Traditionally, one of the major advantages of trading on an approved exchange rather than over-the-counter has been that the exchange guarantees financial performance and removes counterparty risk, whereas in the over-the-counter market each party to each contract assumes the risk that the other party may fail to perform.<sup>46</sup> According to the Chicago Board of Trade, which uses a clearinghouse, “the success of this system is obvious. Since its start in 1925, no customer within or outside of the [CBOT] exchange has lost money due to default on a futures position.”<sup>47</sup>

### Regulation of IPE Brent Contracts

In the United Kingdom, the futures and over-the-counter (OTC) markets are regulated by the Financial Services Authority (FSA). Brent IPE contracts are traded in a manner similar to the trading of NYMEX WTI contracts, and many of the principles underlying the U.K. system commodity market regulation are similar to those of the U.S. system. There are also several significant differences. The U.K. “Code of Market Conduct” governing the U.K. futures exchanges and OTC markets is less prescriptive than the regulatory system under the CEA, emphasizing adherence to general principles of conduct rather than detailed regulations.

Additionally, the U.K. “light touch” regulatory system provides for less stringent regulation of “professional” markets, such as the IPE’s crude oil market, as opposed to markets in which retail investors participate. The rationale for the light touch system is that large institutions and market professionals are sophisticated investors who have less need for protective government oversight than small investors. As explained in Appendix 2, U.S. law exempts certain large market participants trading certain OTC instruments from many CEA requirements, but applies the full array of CEA requirements to the trading of crude oil futures contracts on the NYMEX.

### Market Oversight

The trading of futures contracts on the NYMEX and the other approved commodities exchanges in the United States is regulated by the Commodity Futures Trading Commission (CFTC) under the Commodity Exchange Act (CEA).<sup>48</sup> The goal of Federal commodity market regulation is to ensure that the exchanges remain “a means for managing and assuming price risks, discovering prices, or disseminating pricing information through trading in liquid, fair and financially secure trading facilities.”<sup>49</sup> The primary objectives of

<sup>46</sup>But see *infra*, which explains that OTC traders can now trade instruments backed by a clearinghouse.

<sup>47</sup>Chicago Board of Trade, *Action in the Marketplace*.

<sup>48</sup>7 U.S.C. § 1 et seq.

<sup>49</sup>*Id.*, at § 3. For more information on the regulation of commodity markets, see Appendices 1 and 2.

the CEA are “to deter and prevent price manipulation or any other disruptions to market integrity; to ensure the financial integrity of all transactions subject to this Act and the avoidance of systemic risk; to protect all market participants from fraudulent or other abusive sales or practices and misuses of customer assets; and to promote responsible innovation and fair competition among boards of trade, other markets and market participants.”<sup>50</sup>

A cornerstone of the CEA is the system of self-regulation by the exchanges. Although the CFTC is the Federal agency responsible for regulating the futures markets, and has authority to issue civil penalties for violations of its regulations, and to refer potential criminal violations to the Department of Justice for prosecution,<sup>51</sup> the exchanges themselves have the front-line responsibility for ensuring that trading remains orderly, commodities brokers are properly qualified and registered, sufficient margins are posted to guarantee contract performance, and fraud or market manipulation is detected and stopped. To be permitted to trade futures, an exchange must establish rules and regulations for trading, as well as market oversight and surveillance programs, in accordance with the requirements of the CFTC under the CEA. An exchange whose self-regulatory programs and futures contracts have been approved by the CFTC is termed a “designated contract market.” Generally, a futures contract for a commodity regulated under the CEA must be traded on a designated contract market.<sup>52</sup> A list of currently active designated contract markets is provided in Table A.2–1 in Appendix 2.

To ensure orderly trading, the exchanges have established daily price limits for most commodity futures contracts (limiting the amount the price can increase or decrease in 1 day); position limits for the clearing members of the exchange (so that each clearing member has sufficient capital to cover its commitments); position limits for customers with contracts expiring in the current delivery month (to prevent squeezes of the commodity in the final month of the contract); and reporting requirements for customers with large positions in the futures and options markets. The market oversight and surveillance programs of each exchange monitor price movements, trading practices, and the accumulation of large positions in order to detect potential manipulations and squeezes and take corrective measures before the market is disrupted.

### Price Transparency

Each time a transaction is completed on the floor of an approved exchange, the exchange records the pairing of buyers and sellers and reports the transaction price. These prices are available throughout the day from the exchanges via the Internet,<sup>53</sup> are published in specialty trade publications and daily newspapers, and are reported on a weekly basis by the Department of Energy’s Energy Information Administration. The timely availability of contract prices improves price transparency—the ability of any market

<sup>50</sup> *Id.*

<sup>51</sup> Less than a handful of criminal prosecutions have been brought for violation of the CEA. Markham, *Manipulation of Commodity Futures Prices—The Unprosecutable Crime*, 8 Yale J. on Reg. 281, n.604 (1991).

<sup>52</sup> The exceptions to this general rule are discussed *infra*.

<sup>53</sup> See, for example, NYMEX website, at <http://www.nymex.com>.

participant to see the prevailing price level—and makes futures market contracts a price reference for negotiations in the spot and term contract markets.<sup>54</sup>

### Price Risk and Hedging

The most straightforward use of the futures market by a crude oil producer or refiner is to “hedge” against adverse price movements by locking in the prevailing price for future deliveries. For example, an oil producer can establish a sales price for oil that will be produced later by selling a futures contract. Then, if a drop in market price causes the value of the oil to decline, the decline in the value of the oil sold in the physical market will be offset by the gain in the futures market made when the futures contract is bought back later at a lower price. Conversely, a refiner may want to fix the price that must be paid for crude oil that will be needed in the future. To do so, the refiner could purchase a futures contract for delivery of oil at a specified date in the future. If the price of crude oil increases in the cash market, the refiner’s increased costs in the physical market when the crude oil is bought will be compensated for by its gain in the futures market when at the same time the refiner sells back the futures contract at a higher price. By limiting the uncertainty over future costs, hedging allows companies to offer fixed price arrangements to its customers for its products and to plan and budget for the future without having to bear all of the risk of price changes.<sup>55</sup>

In general, crude oil refiners are more concerned with ensuring they receive adequate margins for their products rather than absolute price levels. It does not necessarily matter to a refiner whether crude oil is at \$20 per barrel and gasoline is selling at \$23 per barrel, or crude oil is at \$25 per barrel and gasoline is selling at \$28 per barrel—the \$3 per barrel margin is the same in both cases. What matters to a refiner is the difference between the price of crude oil and the price of refined products, such as gasoline. To protect their margins, crude oil refiners will adopt trading strategies that protect against changes in relative price levels rather than lock in absolute price levels. These strategies typically involve the simultaneous buying and selling of futures contracts for different commodities, such as crude oil and gasoline futures, or the simultaneous buying and selling of futures contracts for the same commodity in different futures months. These strategies, termed “spread trading,” can be effective in locking in margins and protecting against unanticipated changes in price.

Similarly, crude oil traders, like commodity traders in general, are not so much concerned with absolute prices as they are with relative prices. Whether crude oil is at \$20 or \$25 per barrel is not nearly as important to a trader as whether crude oil was bought for less than it can be sold, or was sold for more than it can be

<sup>54</sup>DOE/EIA-0545(99), *Petroleum: An Energy Profile: 1999*, July 1999, 54–55; DOE, EIA, *Oil Market Basics*; GAO/FREC-93-17, 34–37; NYMEX website, at <http://www.nymex.com>; and February 11, 2002, meeting with NYMEX representative.

<sup>55</sup>The term “hedge” means to take one position in one transaction, such as selling a commodity, and the opposite position in another transaction, such as purchasing the commodity, to minimize the possibility of losses from one of the transactions. The word hedge “evolved from the notion of the common garden hedge as a boundary or limit . . .” Roger Lowenstein, *When Genius Failed* (Random House, 1999), at 25.

bought. Crude oil traders frequently use spread trading to lock in the margin between buying and selling.

Although exchange-traded futures contracts are standardized with respect to the type and quantity of deliverable commodity, standardized contracts can be used to hedge or speculate on price movements for a much broader range of commodities when there is a fairly predictable relationship between the commodity being hedged and the commodity in the standardized contract. Because the price of most crude oil is priced relative to WTI or Brent, the futures markets for WTI and Brent are used to hedge or speculate on price movements of many varieties of crude oil. Thus, for example, a purchaser of crude oil produced in Nigeria—which is priced at a differential to Brent—could use the IPE Brent futures market to hedge against movements in the price of Nigerian crude. Even with this hedge, however, a producer or consumer of Nigerian crude oil would continue to be exposed to the risk of a variance from the normal differential between Nigerian crude and Brent. Such variances could be caused by a variety of global or local conditions, such as political events in Nigeria or the United Kingdom, variations in commodity exchange rates, or changes in the local supply and demand conditions affecting Brent or Nigerian crude.

This latter type of risk is part of a price risk that generally can never be completely hedged—namely, the variance between the spot or cash price and the futures price of a commodity. While the cash price of a commodity and the futures price of the commodity generally converge at expiry of the nearest-month contract, this convergence exists only for delivery of standardized quantities at a particular location on a particular date. Because most purchasers or sellers of commodities would like their purchases and sales to occur somewhere other than the specific location in the standardized futures contract and at a time other than the particular date on which a futures contract expires, the cash price for these particularized transactions will differ from the standardized futures price even at expiry. The risk that the cash price of a commodity will differ from the futures price of that or another commodity used for hedging purposes is known as “basis risk,” the “basis” being the difference between the cash price and the futures price at a given location and time.<sup>56</sup>

### Arbitrage

Although absolute price movements are impossible to forecast accurately, it is possible to make predictions about the relative prices of commodities in various markets, both cash and futures. Many commodities have seasonal supply and demand trends, and prices tend to follow corresponding seasonal patterns. For example, although the absolute levels of future gasoline prices are impossible to predict, gasoline prices in the United States tend to be higher

<sup>56</sup>Typically, the local basis of a commodity will be determined by transportation costs, storage costs, interest rates, and local supply and demand conditions. To minimize risk, or to attempt to obtain profits when cash and futures diverge from their historical relationships, commodity producers, purchasers, and traders closely follow the relationship between cash and futures prices and will structure their trades accordingly. These patterns and relationships are used to determine whether or not to accept cash bids for a particular commodity; which buyer or seller to use; when to purchase, store, or sell a particular commodity; when to terminate a hedge on the futures market; and which future month of a commodity to use for hedging or speculation. Chicago Board of Trade: *Understanding Basis: Improving Margins Using Basis* (1998).

in the summer, when demand is greatest. Traders use these patterns to minimize price risks and costs.

In situations in which several different markets exist for the same commodity, or similar commodities, different prices may arise for the same or similar commodities, either in the cash market or in the futures markets. Local supply and demand conditions may influence one market more than another, traders in different markets may have different information upon which the market prices are based, or different traders may evaluate the same information differently.

Different markets for the same or similar commodities are linked together by the principle of “arbitrage.” “The general notion of cash arbitrage is that traders purchase goods where they are cheapest and simultaneously sell them where they are most expensive. In cash markets, arbitrage opportunities occur when prices in the two markets differ by more than transportation costs between the markets.”<sup>57</sup> In futures markets, opportunities for arbitrage arise when traders believe that futures prices for one commodity at a particular time in the future depart from their historical relationship either to the cash market, the futures prices for another commodity, or the price of the same commodity at another time in the future.<sup>58</sup>

Hence, although there are three major benchmarks and a number of distinct, local markets for crude oil, these crude oil benchmarks and markets, both cash and futures, are linked together by the concept of arbitrage. Arbitrage trading between the Brent markets and the WTI markets, to a large extent determines the price and amount of oil imported into the United States from the Atlantic basin. On average, Brent is less expensive than WTI by about \$1.50 per barrel, and it costs between \$1.00 and \$1.50 per barrel to ship Brent across the Atlantic in a large tanker. Because supply and demand conditions in the European markets and the U.S. markets may differ at any given time, the difference between the price of Brent and the price of WTI can vary from this average. When the price of Brent plus the cost of transporting Brent across the Atlantic is less than the price of WTI, refiners will import more Brent and Brent-priced crudes. When the price of Brent plus the cost of transporting Brent across the Atlantic is more than the price of WTI, refiners will import less Brent and Brent-priced crudes, and instead rely more upon crude oil produced in North and South America, as well as crude oil in domestic inventories. The Brent-WTI price difference, therefore, is one of the most significant factors determining the price and volume of the transatlantic crude oil trade.

A significant amount of commodities and financial trading today consists of sophisticated and complex arbitrage trading designed to exploit differences between the various markets. This type of arbitrage trading brings additional liquidity to the market and helps bring the various markets into an overall equilibrium.<sup>59</sup>

<sup>57</sup> Steven Errera and Stewart L. Brown, *Trading Energy Futures & Options*, at 40 (1999).

<sup>58</sup> Warren Buffet reportedly once said, “Give a man a fish and you feed him for a day. Teach him how to arbitrage and you feed him forever.” Kirk Kinnear, *The Brent/WTI Arb* (NYMEX website).

<sup>59</sup> The Long-Term Capital Management (LTCM) debacle demonstrates how even sophisticated arbitrage trading carries risk. LTCM’s strategy was to exploit differences in currency exchange

#### 4. Over-the-Counter Markets

*“Derivatives are financial instruments that have no value of their own. That may sound weird, but it is the secret of what they are all about.”*

*—Peter L. Bernstein, Against the Gods (Wiley, 1998)*

A derivative is any type of financial instrument that derives its value from an underlying commodity or market index. Strictly speaking, forward and futures contracts are types of derivatives, since their value derives from the value of an underlying commodity.

OTC trading instruments also derive their value from an underlying commodity or market index but, unlike futures contracts, are not traded on a regulated commodities exchange and generally are not used by or offered to small businesses or retail customers. Initially, OTC derivatives were developed as customized devices to meet the particularized needs of parties to protect themselves against adverse price movements in financial and commodity markets, in situations in which such risks could not be adequately addressed by the use of standardized futures contracts on the regulated exchanges. Until recently, the terms of most OTC instruments were negotiated directly between the two parties to the transaction, either face-to-face or through brokers over the telephone.

As OTC derivatives became more popular, parties to these instruments became interested in trading these instruments to help spread risks further. As a result, there has been a rapid growth in the use of standardized OTC derivatives and in the use of electronic exchanges to match parties seeking to trade OTC derivative instruments.

Although the OTC market can provide the parties with more flexibility in crafting particularized instruments than the futures markets, the traditional OTC markets present a number of additional risks as well. In the typical OTC transaction, each party assumes the credit risk that the other party will not perform. There is no “OTC clearinghouse” to guarantee performance. In addition, unlike futures contracts, many individually negotiated OTC instruments are not transferable to third parties without the consent of both parties to the original transaction. Additionally, there is less price transparency in most of the OTC markets than on the designated exchanges. There is also less government oversight to detect and prevent market manipulation and fraud in the OTC markets than on the designated exchanges.

Despite these drawbacks, the overall market for OTC derivatives is now estimated to be several times larger than the exchange-based futures markets. At the end of 1998, the estimated total notional amount of outstanding OTC derivative contracts was \$80 trillion, whereas the estimated total value of outstanding exchange-

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rates, bond prices, interest rates, and other financial instruments, based on mathematical models of the historical prices and volatilities of those instruments. Although LTCM initially earned several billion dollars, with annual returns greater than 40 percent, after Russia devalued the ruble and defaulted on its bonds, an event not anticipated by the model, the fund “blew up” and spiraled into near-bankruptcy, ultimately requiring a multi-billion dollar bail-out by the Wall Street firms and banks with which it had large amounts of outstanding trades. See *Inventing Money*, *supra*; *When Genius Failed*, *supra*.

traded futures and options contracts was \$13.5 trillion.<sup>60</sup> The vast majority of OTC derivatives contracts are interest rate and foreign currency exchange contracts; only a small fraction of the total relates to tangible commodities such as crude oil. The OTC commodities trade is nonetheless substantial; in 1999, the notional value of OTC commodities contracts was estimated at approximately \$1.8 trillion.<sup>61</sup>

Normally, only large financial institutions, corporations, or commodities firms participate in OTC markets. Many of these traders, however, use both the OTC markets and the regulated exchanges. Traders who trade on the designated exchanges often prefer the advantages of a market with more participants and trades (“liquidity”), the greater price transparency provided by the exchanges, and the performance guarantees provided by the exchange clearinghouses. Traders who participate in the OTC markets may prefer the flexibility offered through individualized transactions, have a greater capacity to assume credit risks than other traders, and seek to avoid brokerage fees and margin payments required on the exchanges. Some traders may prefer the lesser degrees of transparency and regulatory oversight.

### **OTC Swaps**

A key type of OTC instrument used by oil and other commodity traders is a derivative known as a “swap.” Swaps were originally developed in the financial markets to hedge against fluctuations in currency exchange rates, interest rates, bond rates, and mortgage rates. Increasingly, they are being used in commodity markets to hedge against fluctuations in commodity prices. Like a futures contract, a commodity swap locks in the value of a commodity at a particular price. For example, in a swap for crude oil to be delivered in the future, the seller will agree to pay the buyer for any increases in the price of crude oil above an agreed-upon value between the time the contract is entered and the time the crude oil is delivered, while the buyer will agree to pay the seller for any decreases below the agreed-upon value.

In both the commodities and financial markets, there are an endless variety of swaps, individually tailored to address the particular risk and speculative strategies of market players. Definitive data regarding the magnitude of the swap market and the type of instruments used is impossible to obtain, however, since there is virtually no regulation of any swaps market.

One of the major advantages of the swaps market is that swaps can be used to hedge against price changes for commodities for which there is not a market on the designated exchanges. To continue with a previous example, a crude oil refiner intending to purchase Nigerian oil could use a swap to hedge that part of the price risk that cannot be hedged by purchasing a Brent futures contract. The refiner could purchase a Brent futures contract to hedge that part of the price of the Nigerian crude that is linked to the price

<sup>60</sup> Report of the President’s Working Group on Financial Markets, *Over-the-Counter Derivatives Markets and the Commodity Exchange Act*, November 1999. The notional amount in a swap represents the value of the commodity or index underlying the swap, not the actual value swapped. Because there are no reporting requirements for OTC commodity transactions, more specific data with respect to commodity derivatives traded on the OTC markets is not available.

<sup>61</sup> Information on Intercontinental Exchange (ICE) website, as of October 2002.

of Brent, and then enter into a swap with another party to hedge the risk that the price of Nigerian crude may vary from the price of Brent crude by a fixed differential. The “price” of this swap would be the price of Brent on the IPE plus the fixed differential between Brent and Nigerian crudes. Through this type of swap, basis risks remaining after futures contracts are bought or sold can be minimized.

Because swaps allow more precise risk management for commodity traders they have become increasingly popular. Since these commodity swaps are often linked to the value of a commodity traded on a designated futures exchange, the growth in the use of such swaps has contributed to a corresponding growth in trading volume on the designated exchanges. In this manner, the price discovery and hedging functions of the designated exchanges and the OTC swaps market are now intertwined.

Most swaps involving energy contracts, metals, and financial instruments are excluded from the extensive regulatory structure that the Commodity Exchange Act applies to the trading of futures contracts.<sup>62</sup> These statutorily excluded swaps include any swap transaction involving a non-agricultural commodity or financial instrument, between large market participants,<sup>63</sup> provided the transaction is individually negotiated and not executed or traded on a “trading facility,” meaning an exchange-like facility where multiple bids and offers are made and accepted. Under current law, then, bilaterally negotiated swap agreements involving crude oil are excluded from all regulation under the CEA.

### Example of a Crude Oil Swap

In April a refiner is planning its crude oil purchases for December. The NYMEX price for December delivery of WTI is \$25 per barrel, and December gasoline futures are at \$30 per barrel. The refiner wants to lock in this \$5 margin for 10,000 barrels. A Wall Street investment firm believes that over the same period the Euro will weaken relative to the dollar, making European crudes cheaper for U.S. refiners to import, and therefore WTI will fall in price. Neither firm is concerned about non-performance by the other, since they both have significant assets. In the swap, they agree that in December, if the NYMEX price for December delivery has increased above \$25, the Wall Street firm will pay the refiner the difference, and if the price has decreased, the refiner will pay the Wall Street firm the difference. Thus, if the December price rises to \$26, the Wall Street firm will pay the refiner \$10,000 (10,000 barrels at \$1 per barrel). The refiner’s net cost for crude oil in December is still \$25 per barrel (\$26 per barrel market price minus \$1 per barrel payment from the Wall Street firm). If the December price falls to \$24, the refiner will pay the Wall Street firm \$10,000, yet its net cost for

<sup>62</sup> Appendix 2 provides more detailed information on the exclusions and exemptions for OTC energy contracts.

<sup>63</sup> These large market participants, termed “eligible contract participants,” include financial institutions, brokers and dealers, corporations with more than \$5 million in assets, and individuals with more than \$10 million in assets. 7 U.S.C. § 2(g) (West Supp. 2002).

the crude still will be \$25 per barrel (\$24 market price plus \$1 payment to the Wall Street firm).

Although the swap is a hedge for the refiner, it is speculation for the Wall Street firm, since the firm will profit if the price of WTI falls as it projects, but lose if the market moves in the other direction. Should the Wall Street firm decide it no longer wishes to speculate on the price of December crude oil, it could buy a NYMEX December futures contract for WTI, in which case it, too, would be hedging. Although the notional value of this swap is \$250,000 (10 barrels x \$25/barrel), the actual payments will be much less.

### **OTC Electronic Exchanges**

Although OTC market participants desire flexibility to craft instruments to address their particular risk strategies, they also would like to be able to trade these instruments when market conditions change. Thus, although there is a large amount of innovation and customization in the types of instruments that are traded on the OTC markets, there also is a movement towards the standardization of features to facilitate the trading of these instruments.

Recently, a number of companies have created organizations and facilities to take advantage of the growing desire to trade in OTC instruments. Generally, they have used strategies that fall into two broad categories. The first, typified by “Enron Online,” provides an OTC trading facility in which the company hosting the facility acts as the counterparty to all of the other parties seeking to buy or sell instruments. These are termed “one-to-many” facilities because one party acts as the counterparty to many other parties. The Enron scandal has exposed a number of weaknesses in this business model, as it provides the one counterparty with significant market power and knowledge that can be used to manipulate the market at the expense of all of the other traders.

The second approach, which has become the most successful type of OTC trading facility, is the “multilateral transactional facility,” whereby an organization provides an electronic trading “platform” that facilitates OTC trading between the parties using the platform, but does not provide clearinghouse operations to guarantee performance or monitor trades.

Using this second approach, in 2000, several investment banks and oil companies formed the Intercontinental Exchange (“ICE”) to trade in OTC energy and metals derivatives.<sup>64</sup> Located in Atlanta, Georgia, the ICE is an electronic exchange open only to large commercial traders.<sup>65</sup> Rather than provide a counterparty to all trades, as do the NYMEX and IPE clearinghouses, ICE acts only as a posting facility for bids and offers, which the traders can then choose

<sup>64</sup>The founding partners of ICE are BP Amoco, Deutsche Bank AG, Goldman Sachs, Dean Witter, Royal Dutch/Shell Group, SG Investment Bank, and Totalfina Elf Group.

<sup>65</sup>Participation is restricted to parties that qualify as an “eligible commercial entity” under § 1a(11) of the CEA. Generally, the entities that qualify are large financial institutions, insurance companies, investment companies, corporations and individuals with significant assets, employee benefit plans, government agencies, and registered securities brokers and futures commission merchants.

to accept or reject.<sup>66</sup> Any large commercial company can trade on ICE's facility without having to employ a broker or pay a fee to a member of the Exchange. All trades are bilateral deals between the buyers and sellers. There is no clearinghouse and, accordingly, no requirement to post margins. The ICE website advertises: "There are no memberships. No artificial restrictions. No dues or fees beyond those incurred in the trading itself."

Although ICE does not require exchange memberships or operate its own clearinghouse, it has established an alternative system for traders to protect against counterparty credit risk. ICE has arranged for traders using the ICE trading platform to apply to the London Clearing House or the Chicago Board of Trade Clearing Corporation for performance guarantees. The ICE software identifies traders who have obtained such performance guarantees, so that traders can choose to accept bids and offers from only those other traders who have obtained such guarantees. A party trading on the ICE platform can eliminate counterparty risk just as if he or she were trading on a futures exchange, thereby eliminating one of the major disadvantages of OTC trading.

The ICE describes the benefits of using its OTC clearing system as follows: "OTC Clearing on the Intercontinental Exchange provides traders and risk managers the best of both worlds: the safety and security offered by a central clearinghouse along with the flexibility and accessibility of the fully-electronic ICE platform."<sup>67</sup>

A 2001 ICE press release describes the extent of the ICE system:

[ICE's electronic trading system] is installed on over 6,500 desktops worldwide from which traders log on each day of the business week to trade more than 600 listed commodity and derivative contract types, approximately 200 more than when Intercontinental went live. Broadly, these include crude oil and refined products, natural gas, power, precious metals, and emissions allowances. Contract forms include physical delivery as well as financially settled swaps, spreads, differentials and options based on a variety of fixed and floating price indices.

According to this release, the total notional value of the contracts traded on IPE over the previous 12 months was in excess of \$500 billion. As of 2001, the daily volume of oil traded on the ICE was approximately 19 million barrels.<sup>68</sup>

The NYMEX also operates an electronic trading platform for the trading of standardized OTC instruments. The NYMEX OTC platform opens for the trading for crude oil contracts at 3:15 p.m., 45 minutes after the close of the open outcry trading in the NYMEX pits, and then closes at 9 a.m. the next morning, 1 hour before exchange trading begins again.

NYMEX also recently began to provide clearinghouse services for traders using the NYMEX electronic trading platform. NYMEX describes its system as follows:

<sup>66</sup>To the extent that all bids, offers, and contract prices of traders using ICE are posted on the ICE system, ICE provides a degree of price transparency that is wholly absent in other OTC transactions.

<sup>67</sup>ICE, Clearing and Credit, at <http://www.theice.com/risk.html>.

<sup>68</sup>Information obtained from ICE website, <http://www.theice.com/home.html>.

NYMEX ClearPort<sup>sm</sup> clearing services are also available to market participants who wish to conduct bilateral energy transactions in a slate of 23 standardized contracts for crude oil, natural gas basis, refined products, and electricity and submit them for clearing. Cleared bilateral transactions are submitted, margin requirements are calculated, and the transactions are processed by the clearinghouse in the same manner as the NYMEX Division futures contracts.<sup>69</sup>

### 5. Convergence of Futures and OTC Markets

As OTC instruments have become standardized, and organizations that operate the designated futures exchanges, like the NYMEX and the ICE/IPE, offer OTC instruments for large institutional traders and provide clearing services for OTC trades, the traditional distinctions between these OTC markets and the futures markets have vanished. Both the futures exchanges and the OTC electronic trading platforms offer standardized instruments; both offer ways to eliminate counterparty risk; and traders purchase, sell, and trade derivative instruments on both markets to hedge price risk. The NYMEX description of its clearing services for OTC trades states: “Energy market participants no longer have to choose between the safety of the cleared, standardized markets of the Exchange, and the exposure to counterparty default that has traditionally been the drawback to customized deals in the over-the-counter markets.”<sup>70</sup>

The OTC markets and the regulated exchanges now offer identical instruments for trading. The NYMEX, for example, now offers futures contracts for OTC trading. Specifically, as shown in Exhibit III-1, one can trade instruments NYMEX calls “Light Louisiana Sweet Crude Oil Futures” and “West Texas Sour Crude Oil Futures” on the NYMEX OTC trading platform.<sup>71</sup> These futures contracts traded electronically on the NYMEX OTC platform are identical in form and function to the futures contracts traded on the NYMEX pit. On the ICE, the instruments that are traded are so similar to futures contracts they are called “futures look-alikes.” Crude oil traders interviewed by the Subcommittee staff stated that, from their perspective, there was no functional difference between the types of crude oil derivatives they traded on the OTC electronic platforms and on the NYMEX or the IPE.

The OTC markets for crude oil were further intertwined with traditional futures markets for crude oil when, in 2001, ICE acquired the London IPE. Following the acquisition, ICE moved to integrate its OTC trading of Brent-related derivatives with the trading of Brent contracts on the London IPE. Recently, ICE began to offer a particular type of Brent contract, the “BFO contract,” for

<sup>69</sup> NYMEX ClearPort<sup>sm</sup> Services Overview, at <http://209.67.30.245/jsp/markets/cp—overvi.jsp>.

<sup>70</sup> NYMEX ClearPort<sup>sm</sup> Clearing Overview, About NYMEX at ClearPort<sup>sm</sup> Clearing <http://209.67.30.245/jsp/markets/otc—overvi.jsp>.

<sup>71</sup> See NYMEX website, at <http://www.nymex.com/jsp/markets/lSCO—otc—llspe.jsp> (LLS OTC futures); <http://www.nymex.com/jsp/markets/lSCO—otc—wtsspe.jsp> (West Texas Sour OTC futures). NYMEX also provides for OTC trading of WTI contracts with future delivery in Midland, Texas, and for trading of Mars Blend Crude Oil with delivery in the Gulf of Mexico. Although these contracts appear to be identical to futures contracts, they are not labeled as such on the NYMEX website.

trading on ICE's platform.<sup>72</sup> Previously, these Brent OTC instruments had been traded exclusively through OTC brokers. To further mesh the operations of ICE and the IPE, the London IPE plans to do away with open outcry trading of Brent futures and move towards an all-electronic trading system.

### **6. Disparity in Market Disclosure and Oversight**

The U.S. futures markets, such as the NYMEX, are the most heavily regulated and transparent commodity markets in the world. Commodity trading on these markets is subject to a variety of reporting requirements and regulations designed to detect and deter fraud and manipulation. This regulation and transparency has bolstered the confidence of traders in the integrity of these markets and helped propel the United States into the leading marketplace for many of the commodities traded on these exchanges.

Today, there are few, if any, differences between the commodity derivative instruments traded on the regulated futures markets and on OTC markets. Although many of the distinctions between the OTC and futures markets have disappeared in recent years, the trading of derivative instruments on OTC markets is subject to much less regulation than the trading of equivalent instruments on the regulated futures exchanges. For example, unlike the regulated exchanges, OTC trading facilities are not required to monitor trading to detect and deter fraud and manipulation. Commodity prices do not have to be disclosed to any oversight body. Although the new electronic trading facilities operated by NYMEX and ICE are improving the price transparency of the OTC market by making data on posted bids, offers, and completed trades available, other trading information routinely reported to the futures exchanges and the CFTC is not available. Large trader reports do not have to be provided on a routine basis to the CFTC, and, unlike trading on the NYMEX, there are no position limits or daily price limits.<sup>73</sup>

A common justification for this disparity in treatment is that the large institutions using OTC markets are sophisticated traders with less need for governmental protection from misconduct. Largely for this reason, Congress determined it was not necessary to apply most of the regulatory safeguards of the CEA to OTC markets in which smaller investors and members of the public do not participate.

With the convergence of the OTC and futures markets, however, this rationale is no longer convincing. Price manipulation in one market can harm other markets involving the same commodity, negatively affect related commodities, and ultimately harm a broad range of the American public. Federal regulation of the commodity markets is designed to protect not just small commodity traders, but also the purchasers of those commodities and the public at large. In the CEA, Congress clearly articulates the national interest in preventing market manipulation:

The transactions and prices of commodities on such boards of trades are susceptible to excessive speculation and can be manipulated, controlled, cornered or squeezed

<sup>72</sup>The BFO contract is explained in the following subsection.

<sup>73</sup>See Appendix 2.

to the detriment of the producer or the consumer and the persons handling commodities and the products and by-products thereof in interstate commerce, rendering regulation imperative for the protection of such commerce and the national public interest therein.<sup>74</sup>

The history of commodity markets demonstrates it is unrealistic to rely on the self-interest of a few large traders to protect the integrity of an entire market.<sup>75</sup> The self-interest of a limited group of large traders is not synonymous with the public interest, and it is not the responsibility of individual traders to look out for public rather than private interests. Most recently, the Enron scandal, which led to exposure of misconduct by traders at several large energy companies active in OTC trading, provides new evidence of how the conduct of a few sophisticated traders can harm not only other market participants, but also the public at large by artificially increasing prices.<sup>76</sup> Consumers paying artificially elevated prices suffer the same harm regardless of whether the commodity price was manipulated through trades executed on regulated exchanges, on OTC electronic trading platforms, or through false information about prices and trades conveyed to price reporting services.

The record also demonstrates that a legal prohibition against commodity market manipulation, without routine market disclosure and oversight, does not effectively deter or prevent manipulation.<sup>77</sup> Routine market disclosure and oversight are essential to halt manipulation before economic damage is inflicted upon the market and the public. As one former CFTC Chairman stated: “The job of preventing price distortion is performed today by regulatory and self-regulatory rules operating before the fact and by threats of private lawsuits and disciplinary proceedings after the fact. Both elements are essential.”<sup>78</sup>

<sup>74</sup> 7 U.S.C.A. § 5 (West 1999).

<sup>75</sup> See discussion of commodity market regulation in the Appendices to this Report.

<sup>76</sup> See, e.g., August 2002 report prepared by the Federal Energy Regulatory Commission (FERC) staff, Docket No. PA02-2-000, which found significant evidence of price manipulation and deceptive practices by Enron in connection with its OTC electronic trading platform known as Enron OnLine. The report includes a detailed analysis of natural gas trades made on Enron OnLine for next-day delivery into California over the course of a single day, January 31, 2001. The report found that of a total of 227 trades on that day, 174 involved Enron and a single unnamed party; these 174 trades took place primarily during the last hour of trading; and by utilizing “higher prices,” these trades resulted in a steep price increase over the last hour of trading. The report also noted that price information displayed electronically on Enron OnLine was a “significant, even dominant, source” of price information used by reporting firms publishing natural gas pricing data. The report tentatively concluded that Enron OnLine price data was susceptible to price manipulation and may have affected not only Enron trades, but also increased natural gas prices industrywide. See also, e.g., “FERC Asks Gas Marketers for Data Given to Indexes,” *Wall Street Journal*, October 29, 2002 (“A handful of companies have already disclosed in recent weeks that their traders provided inaccurate information to publishers of natural-gas indexes.—If traders provided false information—such as pricing and volumes—the possibility exists that they may have manipulated large swaths of the country’s gas markets.”); Plea Agreement filed by former Enron trader Timothy Belden, *United States v. Belden* (USDC NDCA, Case No. CR 02-0313 MJJ), October 17, 2002, admitting to conspiracy to commit fraud “to obtain increased revenue for Enron from wholesale electricity customers and other market participants in the State of California” and to “manipulat[ing] prices” in certain energy markets. Although these instances of fraud and manipulation did not occur through the use of many-to-many electronic trading facilities, they nonetheless illustrate the impact that misconduct by OTC market participants can have on the general public.

<sup>77</sup> See extensive analysis in Appendix 1.

<sup>78</sup> *In re Indiana Farm Bureau Cooperative*, 1982 CFTC LEXIS 25, 72 (Stone, dissenting), *Comm. Fut. L. Rep.* (CCH) ¶21,796 [’82-’84 Transfer Binder] (CFTC Dec. 17, 1982).

The manipulation of the copper markets in the 1990's by Sumitomo Corporation demonstrated that, given a choice, some traders will operate on less-regulated, less-transparent markets in order to avoid the routine disclosure and oversight that takes place on the U.S. futures exchanges.<sup>79</sup> Sumitomo traders admitted using less-regulated overseas and OTC markets to avoid detection by U.S. regulatory authorities. Hence, a disparity in the degree of oversight of different markets that provide traders with functionally equivalent instruments for trading undermines the oversight mechanisms of the more regulated market.

The Subcommittee Minority staff's findings indicate that the current disparity in market disclosure and oversight afforded OTC crude oil markets compared to the regulated exchanges is not justified. OTC markets today function as major trading centers for crude oil derivatives. OTC markets regularly affect crude oil prices on the regulated exchanges, and vice versa, since many of the same traders use both the OTC and futures markets for risk-spreading and price discovery, and trade virtually identical instruments in both markets. The price of many OTC derivatives are linked directly to futures prices on the regulated exchanges.

The unavailability of OTC trading data was a major obstacle to the Subcommittee Minority staff's investigation of allegations of manipulation of crude oil markets in 2002. The absence of data regarding OTC prices and trades made it impossible to determine the extent to which traders may have sought to exploit or exacerbate squeezes through activity on OTC markets. The absence of OTC information made it impossible, in practice, to get a complete picture of crude oil market behavior to determine whether manipulation took place.

Since many of the instruments traded on the regulated exchanges and OTC markets are virtually identical, traders often operate in both settings, and both markets handle billions of dollars in commodity transactions daily, it makes little sense to apply the full panoply of reporting requirements and market oversight to one market but none to the other. The absence of small traders in the OTC markets does not make the market less susceptible to price manipulation. Indeed, a market with fewer, larger participants may be even more susceptible to price manipulation. Moreover, due to the increasing interaction between the OTC and futures markets, price manipulation in one market necessarily affects prices in the other market.

The following discussion of the Brent crude oil market illustrates these points. It explains the interconnections among the spot, futures, and OTC markets for Brent, and how the price of Brent in one type of crude oil market can affect the price of Brent in another. It also describes the relationship between the prices of Brent and WTI, which normally rise and fall together in response to global factors affecting crude oil supply and demand. Using the example of the 2000 Arcadia squeeze, the analysis shows how a market squeeze in Brent can disrupt the normal relationship between Brent and WTI, and increase the price of Brent relative to WTI. This explanation of the Brent market provides a broader context

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<sup>79</sup> See Appendix 1 for a discussion of the *Sumitomo* case.

for understanding the following Section of this Report, Section IV, which shows how depositing large amounts of Brent into the SPR not only spiked the price of Brent in world markets, but led to a cascading set of price spikes in other crude oil and petroleum products in the United States.

## **B. Crude Oil Price Benchmarks**

This part of Section III provides more information about the three types of crude oil, Brent, WTI, and Dubai, that function as price benchmarks for crude oils traded around the world. Additional information is provided about the Brent market for the light it sheds on how crude oil spot, futures, and OTC markets interact, how Brent and WTI markets relate to each other, and how a market manipulation spikes crude oil prices and can shift the price curve for near-term and long-term crude oil contracts.

### **1. Brent Crude Oil**

*“A major feature of the Brent market is that it works extremely well as long as one does not think about it too hard.”*

*—Paul Horsnell, Oxford Institute for Energy Studies  
Monthly Comment, May 2000*

Brent is a light, sweet crude oil produced in the North Sea within the territorial waters of the United Kingdom.<sup>80</sup> Because Brent is slightly heavier and has slightly more sulfur than WTI, which is also a light, sweet crude oil, it normally costs less than WTI.

More crude oil is priced in relation to Brent than to any other type of crude oil. Brent serves as the benchmark for approximately 40–50 million barrels of crude oil produced daily. Most of the crude oil priced off Brent is purchased in Europe. About one-fifth of the 10 million barrels of crude oil imported daily into the United States are priced off Brent. As Figure III–3 shows, the Brent-based imports come from west Africa and northwest Europe.

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<sup>80</sup>Brent crude oil is a mixture of the oil produced in 19 separate oil fields in the North Sea. The oil is collected through two distinct pipeline systems (the Brent and Ninian systems) to a loading terminal at Sullom Voe in the Shetland Islands. Paul Horsnell and Robert Mabro, *Oil Markets and Prices* 11 (Oxford University Press, 2000). The Sullom Voe terminal is operated by the Royal Dutch/Shell Petroleum oil company.

**Figure III-3**  
**U.S. Crude Oil Imports: 2001 Daily Averages**

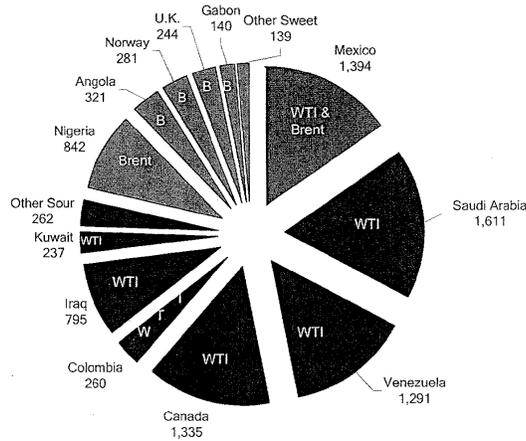


Fig. III-3. About 20 percent of U.S. crude oil imports are priced off Brent.  
 Source of data: EIA, Petroleum Intelligence Weekly.

The U.K. oil fields, including the Brent fields, are among the most mature of the oil fields in the North Sea, and the production of Brent is in decline. In the early 1990's, the Brent fields produced approximately 700,000 barrels per day, which is the equivalent of about 60 cargoes per month. By 2002, production had fallen to around 350,000 barrels per day, or about 20–25 cargoes per month. Production is expected to decline by approximately 15 percent per year for the next several years. (Figure III-4).

**Figure III-4**  
**Brent Production: Daily Volumes**  
**1999 - 2005**

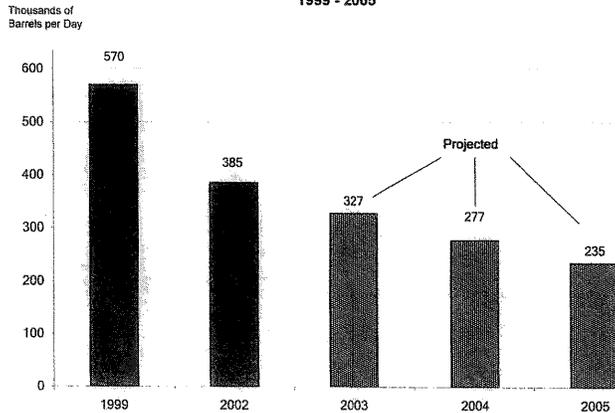


Fig. III-4. Brent production is declining by about 15 percent per year.  
 Source of Brent data: Platts

As is explained in more detail in Section III.C., the drop in the number of Brent cargoes leaving the Sullom Voe terminal to less than 1 per day made the Brent market much more prone to distor-

tions and squeezes. To alleviate this problem, in July 2002, *Platts* added two other grades of North Sea crude oil, Forties and Oseberg, to the pool of oil from which it computes the price of “Brent.”<sup>81</sup> In September, the London IPE approved the inclusion of Forties and Oseberg within the Brent benchmark. The new benchmark is still often referred to as Brent, but also is called “BFO.” The inclusion of the Forties and Oseberg grades within the Brent benchmark has increased the number of cargoes to about 60 cargoes per month and reduced the vulnerability of the Brent benchmark price to manipulation.

The market for Brent is actually a complicated interrelation of four sub-markets: (1) an OTC market for “15-day Brent” which, in 2002, changed to an OTC market for “21-day Brent”;<sup>82</sup> (2) the spot market for “dated Brent”; (3) the Brent futures market; and (4) an OTC market for Brent-based derivatives.<sup>83</sup> Table III-1 summarizes the purpose and function of the four Brent sub-markets. Oil companies and traders use the 21-day Brent market to purchase standardized contracts for the delivery of 600,000 barrel Brent cargoes up to 21 days prior to the loading of those cargoes at the North Sea terminal. The dated Brent market is the spot market used to buy or sell Brent cargoes once they are about to be or after they already have been loaded on ship. The futures market and OTC swaps are used for hedging and speculation, but rarely to obtain actual delivery of oil.

**Table III-1**  
**Brent Crude Oil Trading Instruments**

<b>Trading Instrument</b>	<b>Objective</b>	<b>Trading Period</b>	<b>Market where Traded</b>
BFO 21-Day Contract	Obtain Brent cargoes, Hedge, Speculate	Up to 21 days before loading at Sullom Voe terminal	OTC market
Dated Brent	Obtain Brent cargoes	Within 21 days prior to loading on ship	Spot market
IPE Futures	Hedge, Speculate	Until expiry of contract in month prior to loading month	Futures exchanges: IPE, NYMEX
CFD, DFL Swaps	Hedge, Speculate	Weeks prior to loading	OTC market

Only part of one of these Brent markets—the futures market—is regulated in the United States. Although Brent contracts traded on the NYMEX are fully regulated under the CEA, the vast majority of Brent futures trading takes place on the London IPE, which is regulated by the U.K. Financial Services Authority.<sup>84</sup> The Brent

<sup>81</sup> See footnote 55 for a description of how the price of Brent is calculated.

<sup>82</sup> The 21-day BFO contract replaced the 15-day Brent contract when the Forties and Oseberg grades were added to the benchmark. The additional 6 days were provide to allow buyers more time to make arrangements for delivery if Forties or Oseberg were delivered rather than Brent.

<sup>83</sup> See *Crude Oil Handbook*, *supra*, at B9-B17.

<sup>84</sup> See Section III.A.

OTC markets, including the swaps and 15/21-day Brent contracts, have been exempted from most regulations by the CFTC and the Congress. The result is that the bulk of the Brent market is not regulated under U.S. law.

The complexity of the Brent market has evolved largely for historical reasons, as each type of contract or financial instrument was designed to fill a market need at a particular time. As one commenter has written: “Physics may say that the bumblebee can not fly, but the bumble bee does not think about it. Financial theory would not produce a design like Brent, but Brent traders should also not think about it. The market has in general evolved more through chance than design.”<sup>85</sup> The following subsections provide additional detail about the Brent market.

#### **a. 15- and 21-Day Brent**

The 15-day Brent market evolved to address the need of producers, traders, and purchasers of Brent crude oil to be able to trade in a contract that could accommodate the peculiarities of the Brent production schedule. The major owners of the crude oil in the Brent fields—Shell, BP, Exxon, and Philips/Conoco, which are called the “equity producers”—all use the terminal at Sullom Voe, in the Shetland Islands, off the coast of Scotland, to load the Brent crude oil onto crude oil tankers, some of which can hold up to 2 million barrels of oil. One company, Royal Dutch/Shell, the operator of the Sullom Voe terminal, controls the monthly production and delivery schedule. Shell requires each company that desires to load one or more cargoes at the terminal in any given month nominate the cargoes for loading by the 5th day of the preceding month. Shell finalizes the entire monthly loading schedule by the 15th day of the preceding month.

Until Shell finalizes the loading schedule on the 15th of each month, the producers of Brent crude oil do not know when their crude oil will be available for delivery or sale on the spot market. Initially there can be as much as 30 days variability as to when a particular cargo will actually be delivered. Accordingly, contracts for 15-day Brent specified the month, anywhere from 1 to 4 months in the future, but not the particular date, in which the cargo of Brent will be loaded. Under the 15-day contract, the seller of a cargo to be delivered in a future month was required to provide at least 15 days advance notice to the purchaser of when the cargo will be loaded at the Sullom Voe terminal. Now, under the 21-day contract, the seller is required to provide at least 21 days advance notice.

Even though a producer may know anywhere up to 6 weeks in advance of when a particular cargo will be loaded, the purchaser of that cargo may not learn of the loading date until 21 days in advance. Depending upon the market conditions at the time the notice is provided and the purchaser’s commercial objectives, the purchaser may or may not want actual possession of the cargo. If the original purchaser has sold another 21-day contract to a second

<sup>85</sup> Paul Horsnell, *Oil Pricing Systems*, Oxford Institute for Energy Studies, Monthly Comment, May 2000 (a version of this article originally appeared in *Pipeline*, the magazine of the IPE). A thorough explanation of the Brent market is found in Horsnell and Mabro, *Oil Markets and Prices*, *supra*.

buyer, the first purchaser can require the second buyer to take the cargo if at least 21-days notice is given to the second buyer. The second buyer, in turn, may have sold a 21-day contract to a third buyer, and so on. In this manner, 21-day Brent can move through a “daisy-chain” of buyers and sellers until a purchaser desires physical possession of the oil or the 21-day notice period expires and timely notice cannot be provided to any more buyers.<sup>86</sup>

Purchasers of 21-day Brent can also opt out of the contract by identifying other contract holders with opposite positions and settling out their obligations with each other, along with any necessary adjustments for differences in transaction prices (called “offset” or “bookout”). As with a typical futures contract, there may be many more 21-day contracts for the loadings of Brent in any particular month than there are actual cargoes of Brent in that month.

The market for 15- and 21-day Brent always has been limited to major oil companies and traders. The large size of each contract—each 15-day contract represented a cargo of 500,000 barrels, and each 21-day contract represents a cargo of 600,000 barrels—the complicated mechanics of the daisy chain, and the informal nature of the market are major impediments to small traders. In the 1980’s, about 100 companies traded in this market. As the formal futures markets became more established (the 15-day market existed prior to the futures market for Brent), and trading in over-the-counter derivatives increased, the market for 15-day Brent contracted. By the late 1990’s, only about 30 traders remained. By 1998, the 10 most active traders accounted for over 80 percent of the deals with identified buyers and sellers.<sup>87</sup>

Traditionally, 15-day Brent contracts have been bought and sold through OTC brokers. In September 2002, ICE began to post bids and offers for 21-day BFO contracts on its electronic trading platform.

As explained in Appendix 2, the nature and status of 15-day Brent contracts under U.S. commodities law was debated throughout the 1990’s. The U.S. District Court for the Southern District of New York ignited this controversy in 1990 when, in the case *Transnor v. BP*, the court held that: the 15-day Brent market had a substantial effect on interstate commerce in the United States; the 15-day Brent market was subject to the jurisdiction of the U.S. courts and the CFTC; and 15-day Brent contracts were futures contracts within the meaning of the Commodities Exchange Act. The British government, Wall Street trading firms, and U.S. oil companies charged that the district court’s decision was an unjustified ex-

<sup>86</sup>Under the 15-day contract, the 15-day notice period expired at 5 p.m., Greenwich Mean Time, 15 days before the 3-day loading period or “window.” A holder of a contract who received notice at the last possible moment before the expiration of the notice period and was unable to require another purchaser to take delivery was said to have been “five o’clocked” or just plain “clocked.”

<sup>87</sup>Crude Oil Handbook, at B12. The 15-day market also developed to enable Brent producers to “tax spin” to reduce their tax liability to the British government. Under the British tax code in effect at the time this market developed, the tax paid by producers of North Sea crude oil was based on the market price of the crude oil, which was calculated on the basis of the prior transactions for that type of oil. Under tax spinning, “an oil company would sell a contract to deliver oil into the market. This contract would pass through many hands and frequently end up back with the original company, completing what the market called a daisy chain. Positions would be cancelled out, losses and gains paid up, and the oil company was able to pay taxes based on the lowest price paid for an individual cargo while it shipped the oil off to its refinery.” Steven Butler, *Nervous Trading in a Market Held in Limbo*, Financial Times (London), May 3, 1990; see also *Transnor v. BP*, 738 F.Supp. 1472 (S.D.N.Y. 1990).

tension of American jurisdiction into a British market, could undermine much of the Brent market, and cast doubt on the validity of a host of OTC contracts. In response, the CFTC issued a “statutory interpretation” that 15-day Brent contracts were not futures contracts subject to the CEA, but rather were forward contracts excluded from CEA regulation.

In the Futures Trading Practices Act of 1992, Congress ratified the CFTC’s authority to exempt 15-day Brent and other contracts that could be considered futures contracts from CEA requirements. In 1993, the CFTC issued implementing regulations exempting a host of energy derivatives traded between large institutions, including 15-day Brent contracts, from most of the CEA requirements. Under the Commodity Futures Modernization Act of 2000, a variety of energy derivatives, including 21-day Brent contracts bought and sold on the ICE, are exempted from many of the CEA’s requirements. The end result is that the 21-day Brent market is subject to very limited oversight by U.S. authorities.

#### **b. Brent Spot Market: “Dated Brent”**

Brent crude oil bought and sold on the spot market is known as “dated Brent.” Once the notice period has expired under the 21-day Brent contracts, and the daisy chain has ended, the Brent oil that is to be loaded in the specified time period is traded on the spot market as dated Brent. Dated Brent is generally traded within 21 days of the loading date.

The largest sellers of dated Brent are the Wall Street financial institutions and crude oil traders who have purchased Brent on the forward or futures market, and the largest buyers of dated Brent are the oil companies with refineries in Northwest Europe and in the northeastern United States.

As dated Brent refers to crude oil that is to be loaded in the immediate future, it is the price of dated Brent that is used as the benchmark price for spot and contract transactions. The current price of dated Brent transactions is reported daily by reporting services such as *Platts* and *Petroleum Argus*.

As a cash commodity market, the market for dated Brent has never been regulated, either in the United States or Britain. Although the CFTC may have the legal authority under a strict reading of the CEA to prevent fraud and manipulation in the spot or “cash” market for a commodity regulated under the CEA, the CFTC has never attempted to exercise authority over any spot market apart from its oversight of the corresponding futures market for that commodity. For all practical purposes, the dated Brent market is unregulated.

#### **c. Brent Futures Markets**

Although the NYMEX offers trading in a Brent futures contract, most Brent futures contracts are traded on London’s IPE. Unlike the NYMEX WTI contract, which requires delivery of the physical commodity upon expiry, both the NYMEX and the IPE futures contracts for Brent are cash-settled. Upon expiry, the holders of outstanding contracts requiring delivery must pay the exchange the value of the Brent oil to be delivered, and the holders of the outstanding contracts requiring acceptance of delivery are paid the

value of the crude oil to be delivered. No physical delivery of Brent oil is required.

Because the 21-day Brent contract has many characteristics of a futures contract and the 21-day market performs many of the same functions as a futures market, the IPE Brent futures market is structured to converge to the 21-day market at expiry. The value of the Brent crude oil in the futures market on the date of expiry is therefore linked to the price of the next shipment of Brent crude oil in the 21-day market on that date.<sup>88</sup> By providing a price discovery mechanism for traders in the 21-day market, the IPE Brent futures market makes the more limited 21-day market less susceptible to manipulation.

The IPE Brent futures market attracts a much broader range of participants than the 21-day market, largely as a result of the smaller size of the standard contract—1,000 barrels for an IPE contract as opposed to 600,000 barrels for a 21-day contract. Approximately 75,000 contracts for Brent crude oil futures, representing about 75 million barrels, are traded daily on the IPE.<sup>89</sup>

#### **d. Brent Over-the-Counter Markets**

The peculiarities of the Brent market have created a demand for several other types of financial instruments linked to the price of Brent crude oil. Because the price of Brent futures contracts on expiry are linked to prices on the 21-day market, the price of a cargo of Brent at expiry of a futures contract is fixed from 2 to 6 weeks in advance of the time when the oil underlying the contract is actually loaded for delivery. This time gap means there may be significant changes in the price of a barrel of Brent crude between the expiry of a future contract and when the barrel is loaded at the Sullom Voe terminal.

Two types of instruments were developed as tools for hedgers and speculators to manage the risk of price changes in the price of oil in the 2 to 6 weeks between when a futures contract expires and the Brent is loaded. “Contracts-for-differences” (CFDs) are contracts for the difference between the price of dated Brent and the price of Brent in the first forward month 15- or 21-day contract. By using a CFD, a buyer or seller can effectively lock-in the price of dated Brent in relation to the 21-day price, reducing exposure to changes in the price of the cargo of Brent from the time the 21-day contract expires and the time the cargo is loaded onto the ship.

Because the price of dated Brent is the benchmark price, plus or minus a quality differential, for a variety of crude oils, a CFD is a useful tool, along with Brent futures contracts, for the purchasers and sellers of these other Brent-linked crude oil streams to hedge against the risks of changes in the price of dated Brent. Brent futures contracts, by themselves, leave the purchasers or sellers of

<sup>88</sup>This settlement price, termed the “Brent index,” is computed by taking the average of the following three elements: (1) the price of first month trades in the 21-day market; (2) the price of second-month trades in the 21-day market plus or minus a straight average of the spread trades between the first and second months; and (3) a straight average of all the price assessments published in media reports. These three elements are averaged to minimize the ability to manipulate the IPE price through the manipulation of the off-exchange prices used to calculate the Index. IPE, IPE Brent Crude Futures Contract, available at <http://www.ipe.uk.com/include/downloads/contracts/bc-futures.pdf>.

<sup>89</sup>IPE, *Introduction to the IPE*, available on the IPE website, at [http://www.ipe.uk.com/include/downloads/brochures/introduction%20to%20the%20IPE\(screen\).pdf](http://www.ipe.uk.com/include/downloads/brochures/introduction%20to%20the%20IPE(screen).pdf).

crude oil linked to dated Brent exposed to anywhere from 2 to 6 weeks of change in the price of dated Brent. CFDs provide a hedge against these changes in price. Hence, Brent CFDs have become a key risk-management instrument in the crude oil trade.

As with the formal futures markets for crude oil, the CFD market has grown rapidly since the early 1990's, and since the mid-1990's, trading volumes in CFDs have been larger than for both 15-day Brent and dated Brent. It is estimated that, by 1998, over three-fourths of non-futures Brent transactions were in the form of CFDs, with the remainder in 15-day and dated Brent.<sup>90</sup> Brent CFDs are purchased and sold through brokers, with daily quotes reported and published by *Platts*.

In its description of CFDs, the *Crude Oil Handbook* reports on the strengths and weaknesses of the CFD market, including the incentives they may provide to manipulate underlying weaknesses in the dated Brent market:

While CFDs would seem to be a perfect complement to other Brent markets, these derivatives have come under criticism since their inception as a vehicle for market squeezes and as a source of price volatility. . . . The main problem has been the large variation in price between dated Brent and 15-day Brent. Ironically, the possibility of hedging this exact risk with CFDs has undoubtedly contributed to the growth of the market. The emergence of CFDs did coincide with a period of greater volatility in the spread between the dated and 15-day prices. While the CFD market is meant to hedge that risk, it also may have prompted increased efforts to manipulate price quotes for dated Brent. It also seems to have contributed to squeezes in the forward market, because it provides a way for the initiator of a squeeze to make a profit unwinding the long position that has been created in the forward market by taking offsetting positions in CFDs before the squeeze gets going.<sup>91</sup>

Another popular way to hedge the risk of divergence between the price of dated Brent and the price of Brent futures on the IPE is through the "dated to front-line (DFL) swap." This OTC instrument is similar to the CFD, but is the difference between the price of dated Brent and the price of the next month's Brent on the IPE. As with the CFD, DFL swap prices are tracked and published on a daily basis by oil industry trade publications. DFL swaps are bought and sold either through brokers or directly between the parties.

Generally, the Brent OTC markets are either totally excluded or substantially exempted from regulation under the CEA. CFDs and DFLs that are traded between oil companies, Wall Street firms, and crude oil traders could be considered swap transactions, which under the CFMA are totally excluded from regulation under the CEA. To the extent that OTC instruments, such as 21-day Brent contracts, are traded on an electronic exchange such as the ICE,

<sup>90</sup>*Crude Oil Handbook, supra*, at B16.

<sup>91</sup>*Id.* at B17.

such trades are exempt from all regulation other than some of the bare-bones anti-fraud and anti-manipulation provisions.

Each of the different spot, forward, futures, and over-the-counter markets for Brent crude oil has evolved to address the peculiar manner in which Brent crude oil is brought to the market and the risks of price changes during the process. Because of the importance of dated Brent as a benchmark for the price of so much crude oil worldwide, the highly liquid IPE futures market and OTC markets for CFDs and DFL swaps have become popular mechanisms to spread risk and discover prices for crude oil traded globally. However, in contrast to the highly transparent Brent futures market to which they are linked, at present there is little transparency in the market for Brent OTC instruments.

## 2. West Texas Intermediate (WTI)

*“It’s not ideal, but it’s what we’ve got.”*

*—A crude oil trader, commenting on the NYMEX WTI contract, December 2002*

WTI is the benchmark for approximately 12 to 15 million barrels of crude oil produced or sold each day in the Western Hemisphere. Except for crude oil produced in Alaska, nearly all of the crude oil produced in the United States is priced off WTI. About 80 percent of the crude oil imported into the United States is priced off WTI.<sup>92</sup>

Although more crude oil worldwide is priced off Brent than WTI, the standard NYMEX WTI contract is the most widely traded commodity futures contract in the world. Approximately 150,000 contracts for WTI are traded daily on the NYMEX, representing a volume of crude oil equal to nearly twice the world’s daily production.

WTI is actually a blend of crude oils produced in oil fields in Texas, New Mexico, Oklahoma, and Kansas. These crude oils all have relatively low sulfur levels and are relatively low in density. Like Brent, the production of WTI is dwindling. Ten years ago, around 750,000 barrels of WTI were produced daily; presently, around 400,000 barrels of WTI are produced daily. Future production is expected to decline.<sup>93</sup>

As a result of the historical development of Cushing, Oklahoma, as a transportation and storage hub for crude oil produced in the region, the standard NYMEX futures contract for light sweet crude oil provides for the delivery of WTI or several comparable alternative grades at that location. Presently, there are about 20 million gallons of storage capacity at Cushing and an extensive network of crude oil pipelines leading into and out of these facilities. However, Cushing is landlocked, far from the ports handling oil imports and exports, and no longer the central distribution point it once was for crude oil produced in the United States.

Numerous industry participants are concerned about the potential for distortion—either intentional or unintentional—of WTI pricing due to the limited volume of WTI produced each month, the relative isolation of Cushing from global trade, and limits on Cushing’s pipeline and storage capacity. Like Brent, the production of

<sup>92</sup> See Figure III-3. Because WTI is the benchmark for most of the crude oil consumed in the United States, exporters of North Atlantic basin crudes priced off Brent often will quote the prices in relation to WTI to facilitate price comparisons for U.S. importers.

<sup>93</sup> Subcommittee interviews, 2002.

WTI is half of what it once was. Like Brent, the constrained logistics of WTI production, transport, and storage can make the availability of WTI subject to artificial bottlenecks or surges in supply.

One of the most frequently raised issues regarding the WTI benchmark is that 80 percent of the tank storage capacity at Cushing, Oklahoma is controlled by two companies, BP and Shell. Figure III-5 shows one industry estimate of the division of ownership of the crude oil storage tanks at Cushing. Because crude oil inventories in the Midwest strongly affect WTI prices, the concern is that the actions of these two firms regarding their storage tanks at Cushing may have a disproportionate impact on Midwestern supplies and inventories and hence on the price of WTI.

Figure III-5  
Ownership of Storage Tanks at Cushing, Oklahoma

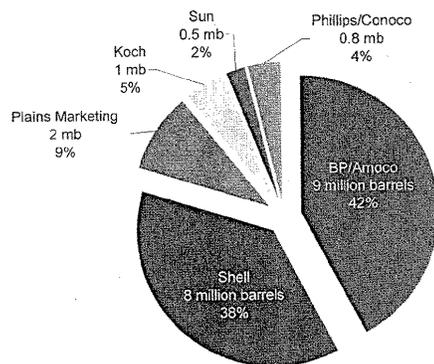


Fig. III-5. Two companies own 80 percent of the storage tanks at Cushing, Oklahoma, the location for delivery of crude oil under the NYMEX WTI contract. Source: industry estimates.

Many oil companies and traders do not consider the WTI price at Cushing, Oklahoma, to accurately reflect global supply and demand, and therefore do not rely solely on the price of WTI as a reference price to determine whether to import crude oil from Europe or west Africa. These companies and traders also use the price of Light Louisiana Sweet (LLS) crude oil, which is delivered on the Gulf Coast, to gauge whether it is profitable to import crudes from across the Atlantic (with attendant transportation costs) or instead purchase domestic crudes.<sup>94</sup>

### 3. Dubai

Generally, crude oil purchased in Asia, most of which originates in the Middle East, is priced off the Dubai benchmark. This bench-

<sup>94</sup>The addition of several new futures contracts for trading on the NYMEX OTC trading platform, including a LLS futures contract, indicates there may be sufficient market demand for futures contracts that can more precisely hedge crude oil costs than can be done with just a NYMEX WTI contract. As the Brent market shows, however, a proliferation of OTC instruments that complement an exchange-traded futures contract can obscure the price discovery function of the basic futures contract, expose the underlying exchange-traded contract to price distortions created in the OTC market, and introduce additional barriers to market transparency since OTC prices are not required to be published and may not always be widely available.

mark price is calculated from the price of crude oils produced in both Dubai and Oman. Approximately 10–15 million barrels per day of crude oil are priced off the Dubai benchmark. Only a small fraction of U.S. crude oil imports are linked to the price of Dubai oil.

Initially, the Dubai benchmark price was calculated solely on the basis of the price of crude oil produced in Dubai. However, as production declined from around 350,000 barrels per day 10 years ago to around 200,000 barrels per day in recent years, the Dubai market became volatile and susceptible to manipulation. In 2001, *Platts* added Omani crude oil to the benchmark formula, which effectively doubled the amount of crude oil underlying the calculation. The inclusion of Omani crude oil in the benchmark calculation immediately reduced the volatility of the price of Dubai.

Just as crude oil purchasers located in the United States use the difference between the price of Brent and the price of WTI as a major factor in determining whether to import crudes from Europe and west Africa, purchasers in Asia use the difference between the price of Brent and the price of Dubai as a major factor in determining whether to export European and west African crudes to Asia. Hence, the price of Brent is a critical component of the entire global crude oil trade, and the relative price of the three benchmarks is a major factor determining the global flow of crude oil.

### C. The Vulnerability of the Brent Market to Squeezes

*“If you have to ask who the chump is, you’re it.”*

*—Alleged Remark of a Crude Oil Trader following Brent Squeezes in 2002*

As production of Brent crude oil has dwindled, the number of Brent cargoes leaving the Sullom Voe terminal declined from about 60 cargoes per month a decade ago to only about 20 cargoes per month, or less than 1 per day, by the first half of 2002. This drop in the number of cargoes made the Brent market, prior to the addition of the Forties and Oseberg grades to the Brent pricing mechanism in mid-2002, prone to squeezes by making it possible for a single company to purchase most of the Brent production in a given month. As Horsnell and Mabro observed in their textbook on the Brent market, “it is much easier and more tempting to squeeze a twenty cargo loading programme in a month than a sixty cargo programme.”<sup>95</sup>

One large-scale squeeze of the Brent market occurred in the summer of 2000, in an episode that is commonly referred to as the “Arcadia squeeze.” This squeeze disrupted the Brent market and led to spikes in the prices of crude oil priced off Brent, reportedly costing U.S. refiners tens of millions of dollars. The magnitude of the Arcadia squeeze surprised market observers and alerted the market to possible means and consequences of manipulating the price of Brent.

Arcadia, a wholly owned subsidiary of the Japanese Mitsui Corporation, is a crude oil trading company, doing business principally in London and Geneva, and is active in the global and Brent crude

<sup>95</sup>Paul Horsnell and Robert Mabro, *Oil Markets and Prices* 138 (Oxford University Press, 2000).

oil markets. In September 2000, the Tosco Corporation, a refining company that has since been merged into what is now Philips-Conoco, sued Arcadia for \$30 million in damages due to the higher costs for crude oil resulting from Arcadia's alleged manipulation of the Brent market.<sup>96</sup> According to Tosco, Arcadia and other crude oil traders "pursued a complex scheme to monopolize the September Brent Crude sub-market, thereby manipulating the entire September [2000] Brent Indexed market."<sup>97</sup> Tosco further alleged, "Arcadia knew at all times relevant that, by manipulating the *Platts* price for Brent crude, it would in turn manipulate prices for crude oil being purchased for delivery to the eastern United States."

Because Arcadia settled with Tosco several weeks after the lawsuit was filed in a confidential settlement, Tosco's complaint and contemporaneous press reports of the lawsuit are the main public sources of information about Arcadia's trading activities during this period.<sup>98</sup> In addition, however, Arcadia's Brent trades left a trail of price spikes in the Brent spot, futures, and over-the-counter markets. These price spikes are consistent with the price spikes left by squeezes in other commodity markets.

In its complaint, Tosco outlined how Arcadia allegedly manipulated the limited Brent market:

Arcadia effectuated its scheme by obtaining control of the market for 15-day Brent contracts for September 2000 delivery. Arcadia did so by surreptitiously purchasing more 15-day Brent contracts for September delivery than it knew could be physically delivered in September. Only a finite number of shipments of Brent crude are available for delivery in any given month. In conspiring to control the September Dated Brent market, Arcadia and its co-conspirators were undoubtedly aware that, due to a market abnormality, only 22 deliveries of Brent oil would be available in September, much fewer than would be available in a typical month.

Tosco asserted that Arcadia and its coconspirators used this "monopoly power" over the September deliveries of Brent oil to raise the price of Brent crude oil and all other crude oils indexed to the price of Brent "higher than would result from the ordinary functioning of the market." According to Tosco, "From August 21 to September 5, the price of Brent crude increased by \$3.33 per barrel, including a 1-day leap of \$2.38 per barrel between August 24 and 25." Moreover, said Tosco, "In a conversation with a Tosco

<sup>96</sup> *Tosco Corp v. Arcadia Petroleum Ltd.*, (D.C. S.D.N.Y.) Complaint, Sept. 7, 2000.

<sup>97</sup> Tosco's complaint described the use and purpose of 15-day Brent contracts in a manner akin to futures contracts:

"15-day Brent" transactions are paper transactions involving the sale or purchase of cargoes for delivery on an unspecified day of a given future month. The cargo becomes deliverable when the seller gives 15 days notice to the buyer. Notice often travels down a chain of subsequent traders until one chooses to accept physical delivery of the cargo. Because 15-day Brent transactions do not initially require physical delivery, they are frequently traded for hedging and speculation purposes.

<sup>98</sup> The Subcommittee staff requested an interview with Arcadia to provide it with an opportunity to clarify or supplement the record regarding Tosco's allegations of manipulation and antitrust violations. Arcadia declined to meet with the Subcommittee staff on any of the several dates proposed. Arcadia, which is organized outside the United States, is the only company trading crude oil that did not cooperate with Subcommittee requests for information in this investigation.

trader, an Arcadia trader stated that Arcadia controlled the September market for Brent crude, that Arcadia had raised the price of September Brent Crude by approximately \$3.00 per barrel and that Arcadia could raise the September price further than it already had.” “By causing September Brent Crude prices to spike,” Tosco declared, “Arcadia’s squeeze on the market caused injury to every buyer in the September Brent Indexed market.”

Arcadia has told the London IPE that all of its Brent trades during this period had valid commercial justifications.<sup>99</sup> Similarly, Glencore International, one of Arcadia’s alleged coconspirators, acknowledged that Arcadia bought large amounts of Brent crude in August and September 2000, but asserted that these trades were undertaken for a valid commercial reason—to fulfill specific contracts for Brent crude oil. According to Glencore, “the need to supply a crude contract to India” was one of the reasons for the large purchases of September Brent.<sup>100</sup>

Although Arcadia and Glencore asserted there were valid commercial reasons for Arcadia’s near-monopolization of the September 2000 Brent market, others were skeptical. According to *Platt’s*, “India’s Ministry of Petroleum and Natural Gas asked its refiners at the end of August to reduce runs due to a drop in demand.”<sup>101</sup> “Something is amiss,” Philip Verleger wrote in late August 2000, “On the one hand traders claim the oil is needed in India. On the other hand, India does not really need the oil.”<sup>102</sup>

The effects of Arcadia’s purchase of large amounts of Brent cargoes in August and September 2000—whether a legal squeeze or an “abusive” one<sup>103</sup>—can be seen in a number of price charts. The data shows that the Arcadia squeeze raised, not only the spot price of Brent in August and September of 2000, but also the price of the futures contracts sold in August and September for the delivery of Brent crude oil in September and October. These price increases, in turn, raised the price of Brent OTC instruments whose value was linked to the spot and futures prices. The resulting price spikes are clearly observable in crude oil price data over this time period.

Figure III–6 shows the increases in both the spot price of Brent and the price of the expiring Brent futures contracts resulting from the Arcadia squeeze of the Brent market in August and September 2000.

<sup>99</sup> Interview with IPE officials, November 2002.

<sup>100</sup> Ross McCracken, Esa Ramasamy, Beth Evans, *Brent Row Escalates as Unipecc Suspends Trading with Arcadia*, *Platt’s Oilgram News*, September 13, 2000.

<sup>101</sup> *Id.*

<sup>102</sup> *Id.*

<sup>103</sup> Whether Arcadia and Glencore had a legitimate commercial need for the large amounts of Brent crude purchased in August and September 2000 is critical to any determination, under U.S. law or U.K. law, on whether the Brent market was illegally manipulated. Under both U.S. and U.K. commodities law, manipulation will be found only if congestion in the market is not the natural result of supply and demand conditions in the market, but was intentionally created by a trader for the specific purpose of creating an artificial price. Accordingly, in this Report the use of the term “squeeze” does not connote illegal activity, unless there are additional elements present that amount to an “abusive squeeze” or “manipulation.” See Appendix 1 for a more detailed discussion of the law of manipulation.

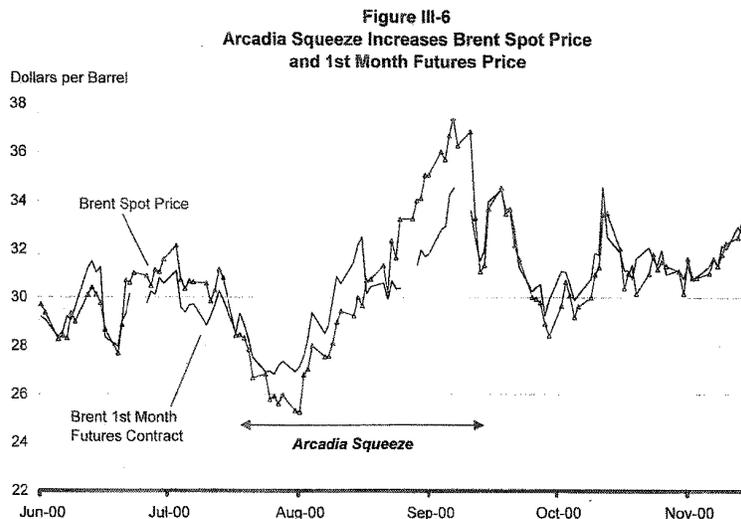


Fig. III-6. The Arcadia squeeze increased the Brent spot price in August and September 2000, and the price of the futures contracts expiring in those months. Source of price data: EIA.

A sharp increase in the price of the nearest futures contract as the current contract nears expiry is a classic sign of a squeeze.<sup>104</sup> This spike in the price of the near-term contract occurs because towards the expiry of a futures contract the “shorts”—those who must deliver the commodity to the “longs” when the next-month contract expires—must either purchase the physical commodity to make delivery or pay those expecting delivery—the “longs”—to cancel out the obligation to deliver. In a squeeze, the supply of the physical commodity is in scarce supply, especially as compared to the outstanding contracts to deliver, so that the “shorts” have no alternative but to pay the “longs” for their expiring futures contracts to cancel their obligation to deliver the commodity.<sup>105</sup> Because the shorts are legally obligated to either deliver the commodity—of which there is insufficient amount to supply all of the outstanding contracts—or purchase the contracts from the longs to cancel the obligation for delivery, the longs can “squeeze” the shorts for a high price for the purchase of the long contracts.

Because a squeeze creates a near-term shortage of the commodity, and not a fundamental change in the long-term supply or demand for the commodity, another tell-tale sign of a squeeze is an increase in the price of the commodity for near-term delivery as compared to the price of the commodity for delivery farther out in

<sup>104</sup>Stephen Craig Pirrong, *The Economics, Law, and Public Policy of Market Power Manipulation*, 148 (Kluwer Academic Press 1996).

<sup>105</sup>“He that sells what isn’t his  
Must buy it back or go to prison.”

Attributed to Commodore Vanderbilt, in Edwin Lefèvre, *Reminiscences of a Stock Operator*, 236 (Wiley, 1994).

the future.<sup>106</sup> When a commodity price is higher for near-term delivery than for later delivery, the price curve of the commodity is said to be in “backwardation.” When the commodity price for later delivery is higher than for delivery in the near future, the price curve for the commodity is said to be in “contango.” A sudden shift from contango to backwardation and a sharp increase in an already backwardated market are also classic signals of a squeeze.

As Figure III-7 illustrates, during the Arcadia squeeze the Brent futures market became sharply backwardated, with near-term prices exceeding prices for later deliveries.

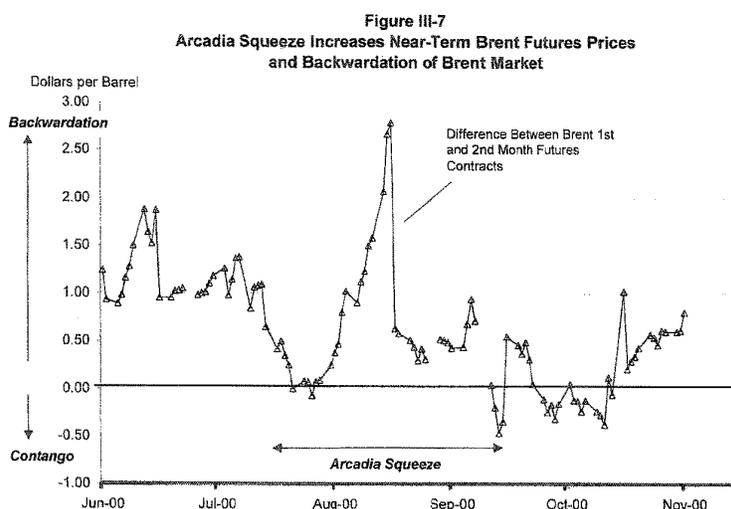


Fig. III-7. In August 2000, as Arcadia's purchases of September Brent cargoes squeezed the Brent market, the price of futures contracts expiring in August (1st month contract) increased relative to the price of contracts expiring in September (2nd month contract). Source of price data: IPE.

In addition, price data shows that Brent prices rose sharply compared to WTI prices. This change in relative prices shows that the increased Brent price was not due to worldwide pressures on crude oil markets, but rather to events that affected only the Brent and not the WTI market. During a squeeze, the price of the squeezed commodity will increase in relation to the price of similar commodities that are not squeezed.<sup>107</sup> Although the demand, and hence price, of related, substitutable commodities may also increase as the squeezed commodity becomes scarce and buyers seek alternative supplies, the primary effects of the squeeze are seen by comparing the price of the squeezed commodity to the price of similar but “unsqueezed” commodities.

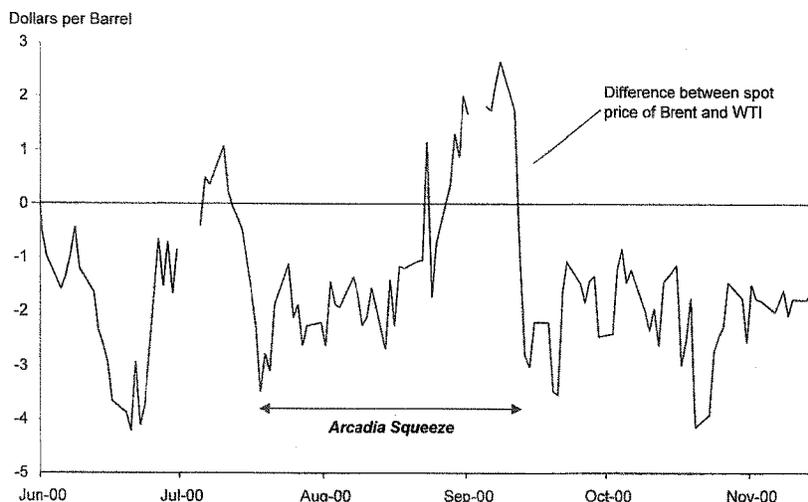
Figure III-8 shows that during the Arcadia squeeze the price of Brent crude oil rose sharply in comparison to the price of WTI. This is strong evidence that the price rise that occurred at the time

<sup>106</sup> Pirrong, at 147; Jeffrey Williams, *Manipulation on Trial*, 83 (Cambridge University Press, 1995); Horsnell and Mabro, at 132.

<sup>107</sup> Pirrong, at 146; Williams, at 87.

was caused by a distortion in the market for Brent crude oil, rather than some other factor affecting the general global supply and demand for crude oil.

**Figure III-8**  
Arcadia Squeeze Increases Price of Brent Compared to WTI



**Fig. III-8.** The price of a squeezed commodity will rise in relation to the price of similar but unsqueezed commodities. Normally, Brent is priced about \$1.50 less than WTI. During the Arcadia squeeze, Brent rose to nearly \$3 more than WTI. Source of price data: EIA.

The relationship between Brent and WTI is a major factor determining the volume and price of crude oil imported into the United States. Normally, Brent sells for about \$1.50 per barrel, on average, less than WTI. Because it costs on average between \$1.00 and \$1.50 per barrel to transport a very large tanker of crude oil from the North Sea across the Atlantic Ocean to ports in the United States, Brent is generally price-competitive with WTI only when it is priced at about \$1.50 per barrel less than WTI. When the price of Brent plus the costs for shipping Brent to the United States is less than the price of WTI, the transatlantic “arbitrage” is said to be “open,” meaning that Brent and other crudes priced off Brent will be less expensive than WTI.<sup>108</sup> Lower costs for importing Brent mean U.S. imports of these crude oils will be more attractive for U.S. refiners, who will then increase their purchases of Brent and other crudes priced off Brent. When the price of a barrel of Brent plus transportation costs is greater than the price of WTI, it is less economical to import Atlantic basin Brent-based crudes, and the transatlantic “arbitrage” is said to be “closed.” U.S. refiners then import less crude from the North Atlantic and rely more on their inventories and crude oils that are produced in North and South America and priced off WTI.

<sup>108</sup> Importers also consider the relationship between the price of WTI and the price of other domestic grades.

An article by a crude oil trader for a major U.S. oil company posted on the NYMEX website describes the significance of the Brent-WTI price difference as follows:

Several times during the year, the market provides price incentives for the Atlantic Basin sweet production to flow west. The Brent/WTI spread is the “roadmap” the industry studies to determine if the arbitrage is open or closed. The status of the arbitrage is one of the driving factors determining the structure of the forward WTI and refined product market price curves in the United States and Europe. An open export market for Brent implies tighter supplies for the United States, and the reverse is true when the barrels are priced to stay in Europe.<sup>109</sup>

Figure III-9 shows, for a typical 12-month period during the 1990's, the relationship between the spot prices of Brent and WTI. During this period Brent and WTI spot prices closely tracked each other over a wide range of prices—from a low of \$9 to a high of about \$19 per barrel. On average, WTI was \$1.86 more expensive than Brent. At no time was Brent more expensive than WTI.<sup>110</sup>

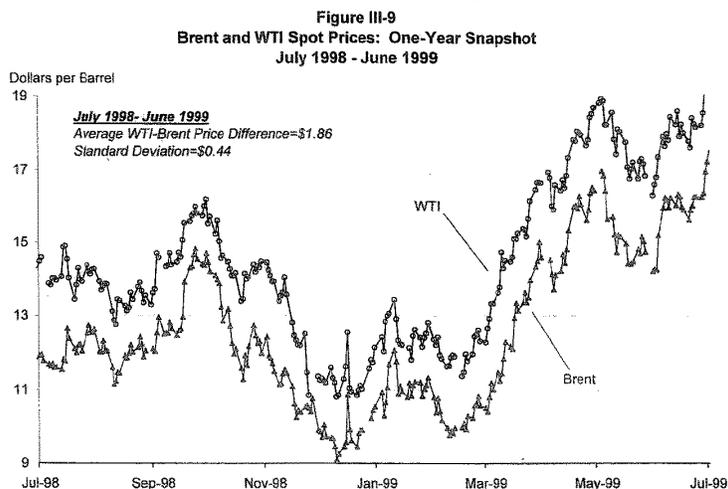


Fig. III-9. Typically, Brent and WTI prices closely track each other. During the 1990s, Brent was usually between \$1 and \$2.50 per barrel less than WTI. Source of price data: EIA.

<sup>109</sup>Kinnear, *The Brent/WTI Arb: Linking the World's Key Marker Crudes* (NYMEX website). This article further describes how the closing of the Brent/WTI arbitrage, which results in a reduction in the amount of Atlantic basin crude oil imported into the United States, can have a significant effect on U.S. crude oil prices:

Deliveries of Brent to the U.S. Gulf Coast and East Coast of Canada can reduce demand for domestic sweet barrels including WTI. When the trans-Atlantic sweet crude arbitrage to the United States is completely closed, there is typically a draw on sweet crude inventories; WTI volatility increases as does the probability of a market distortion.

<sup>110</sup>The standard deviation of the Brent-WTI price difference during this 12-month period was about 44 cents; hence about 68 percent of the time the price of Brent was between \$1.42 and \$2.32 less than WTI; and 95 percent of the time Brent was between 98 cents and \$2.76 less than WTI. The co-efficient of correlation between Brent and WTI prices during this period, “R”, is 0.981, indicating a high correlation between the two markets (R=1 indicates a perfect correlation).

As Figure III-8 shows, during the Arcadia squeeze the price of Brent rose to nearly \$3.00 per barrel more than WTI. As Tosco's complaint states, such an increase in the price of Brent would make other Atlantic basin crude oils priced off Brent significantly more expensive for U.S. refiners. As the price of Brent rose to artificially high prices, U.S. refiners, such as Tosco, had to pay more for their imports that were indexed to the price of Brent.

Figure III-10 shows the price difference between Brent and WTI from January 1992, through December 2000. The data shows that, on average over this 9-year period, Brent cost \$1.46 less than WTI. The data also shows that, in 2000, the Arcadia squeeze raised the price of Brent compared to WTI to extraordinary levels when compared with the prior Brent-WTI relationship.

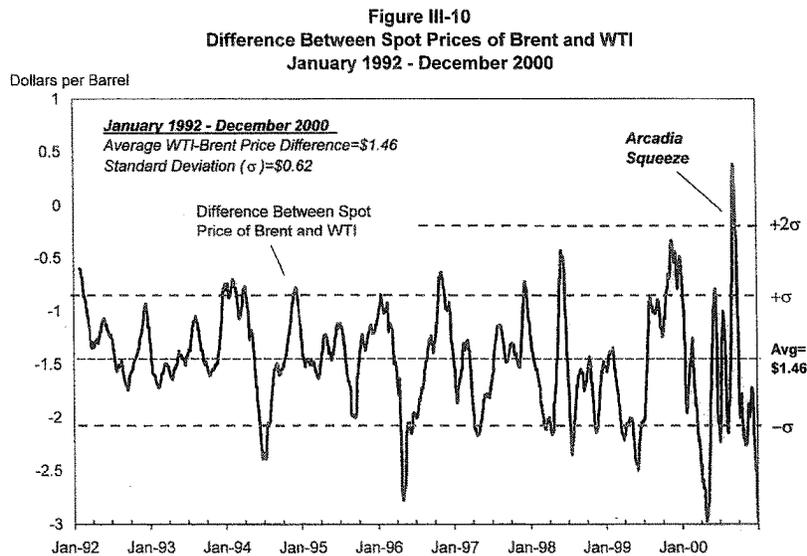
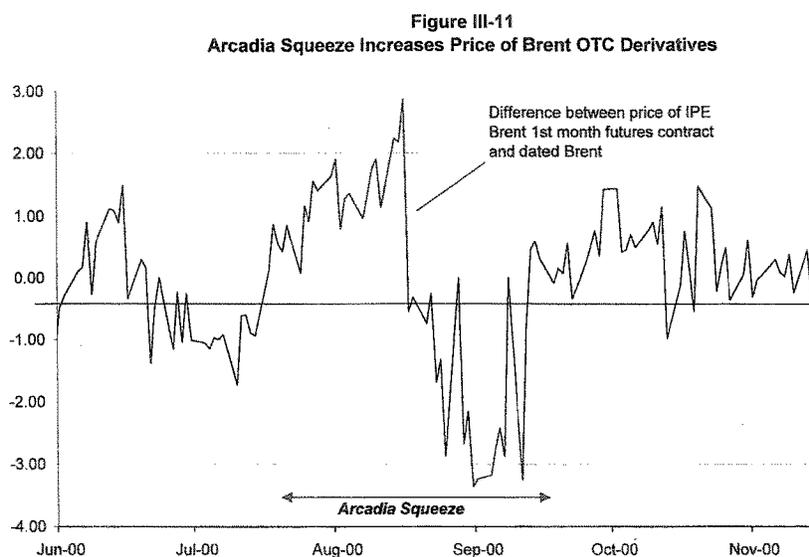


Fig. III-10. During the Arcadia squeeze, the price of Brent rose significantly in relation to WTI. Prices reflect 20-day moving averages. Source of price data: EIA.

Due to the peculiarities of the Brent market, a trader seeking to acquire a large number of Brent cargoes at some month in the future must acquire 21-day contracts to obtain the physical cargoes, as well as futures contracts and OTC instruments to hedge against the price increases that can be expected to follow from the increased market demand for Brent caused by the trader. As explained earlier, crude oil traders use Brent derivatives called contracts-for-differences (CFDs) and dated-to-frontline (DFL) swaps to hedge Brent price risks.<sup>111</sup>

<sup>111</sup>A CFD is the difference between the price of dated Brent ("spot price") and the price of the 15- or 21-day contract needed to obtain a physical cargo of Brent. A DFL swap is the difference between the price of dated Brent and the price of the expiring IPE contract. See Section III.B.

A squeeze in the Brent market will increase the price of CFDs and DFL swaps, since the values of these over-the-counter derivatives are linked to the spot and futures prices for Brent. As the price of the near-term futures contract increases in a squeeze, the price of the related OTC Brent derivatives will also increase. Figure III-11 shows that, during the Arcadia squeeze, the relative price of the Brent first month futures contract increased compared to the price of dated Brent, indicating a spike in the price of a DFL swap.



**Fig. III-11.** During the Arcadia squeeze, the price of the expiring Brent contract rose relative to the price of dated Brent. Source of price data: EIA and IPE.

In addition to sharp price increases, Figures III-6, 7, 8, 10, and 11 also show classic price “drop-offs” after the squeeze is ended. A sudden drop in the spot price of a commodity or the price of a futures contract right after expiry of the contract is yet another indication of a short-term squeeze in the market for that commodity. Following the run-up at expiry in the price of the squeezed commodity and the expiring futures contract, the price of the commodity and the futures contracts rapidly fall to reflect the normal supply and demand in the market. Price spikes caused by factors other than squeezes do not normally cluster around the expiry of a futures contract.<sup>112</sup>

The magnitude of the Arcadia squeeze surprised market observers. “In the 20 years that I’ve been following the oil market, this is probably the most extreme example of an artificial price being created that I’ve observed that has persisted for as long as this one

<sup>112</sup>Pirrong, at 147; Horsnell and Mabro, at 132.

persisted,” said oil economist Philip Verleger at the time.<sup>113</sup> Another petroleum economist, University of Houston Professor Michael Economides, stated at the time, “The idea that one could corner, could encompass an entire benchmark market and, consequently, manipulate potentially other prices is absolutely fascinating and, in my view, astonishing. We certainly have not been confronted with a situation like this, to my knowledge, in the history of the petroleum industry.”<sup>114</sup>

Others, however, viewed Arcadia’s squeeze and the use of derivatives to profit from the Brent squeeze as business-as-usual in the petroleum markets. Commenting on Arcadia’s effect on the market, the *Oil Daily* wrote, “[T]he manipulation of dated Brent by trading houses, who skillfully engineer gains in derivatives markets, sometimes by sacrificing losses in physical markets, has evolved into a high art. And it is not only buyers of Brent that are affected. Buyers of Nigerian or other Brent price-linked crude grades exported to the US could argue that they too had been harmed by the manipulation of the Brent market.”<sup>115</sup>

The price data during the period of the Arcadia squeeze demonstrates that a squeeze can spike prices not only in the crude oil spot and futures markets, but also in the OTC markets. The extent to which Arcadia profited from the squeeze caused by its activity in the Brent market is not known.

Robert Mabro, Director of the Oxford Institute for Energy Studies, and one of the foremost authorities on the Brent market, contends the OTC Brent market facilitates squeezes, and enables traders to artificially create profits from the weaknesses in the market. According to an interview of Dr. Mabro reprinted by the Derivatives Study Center in 2000:

“A typical Brent squeeze involves a company quietly building a strong position in short-term swaps called contracts-for-differences, or CFD’s, for a differential not reflected in current prices. The company then buys enough cargoes in the dated Brent market to drive the physical crude price higher, which boosts the CFD differential,” Mabro said. “The company may lose money on the physical side, but it’s more than compensated from profits on its offsetting paper position in the short-term swaps market,” Mabro said. “The whole trick is to collect more money in CFD’s than you lose on the physical squeeze,” Mabro said. “People seem to do it in turn. It depends on who’s smart enough to move in a way that nobody notices until it happens.”<sup>116</sup>

In another article, Dr. Mabro concluded that the variety of financial instruments and the complexity of the Brent market magnifies the vulnerability of the Brent market to squeezes and price distortions:

<sup>113</sup>National Public Radio, *All Things Considered*, October 3, 2000.

<sup>114</sup>*Id.*

<sup>115</sup>Paul Merolli, Stephen MacSearraigh, *Tosco Sues Arcadia for Brent Manipulation*, *Oil Daily*, September 11, 2000.

<sup>116</sup>Derivatives Study Center, *Not Learning the Lessons of Long-Term Capital’s Failure*, September 2000.

The array of instruments available to traders enable a small number of powerful and sophisticated players to operate squeezes or launch other operations which causes prices to move in directions do not always reflect the actual state of the supply/demand balance. Whether these “games” whose frequency has been increasing in recent years affect price trends over the medium term is debatable. It is certain, however, that they cause higher price volatility, and that they rob prices from their most important function which is to signal at every movement the state of the supply/demand balance.<sup>117</sup>

Dr. Mabro and others point to profit-taking in OTC derivatives as a major source of gain for traders attempting to squeeze the crude oil markets. Price data tracing OTC price increases and documenting OTC trading gains is unavailable, however, due to the lack of price transparency and disclosure requirements in OTC markets.

Dr. Mabro observes that large players in the crude oil markets have little incentive to improve the operation of the markets, and this situation harms U.S. interests and consumers:

Traders like [the current situation] because they all think that it provides them with opportunities to make money. . . . Whether the system is good for the exporting countries, the oil companies, the importing countries, the US government and the final consumer is very doubtful. Judging from recent experience it is clear that nobody likes either very high or very low oil prices. When they obtain, it is far too easy to blame OPEC. The issue however is not OPEC on its own but the system in its complex operation, in the links between various markets, and the awkward relationship between markets and OPEC. A fundamental reform is required.<sup>118</sup>

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<sup>117</sup> Robert Mabro, *Oil Markets and Prices*, OIES Monthly Comment, August 2000. Dr. Mabro's comments were written prior to the implementation of the BFO contract. In an interview with the Subcommittee staff in December 2002, Dr. Mabro stated that the new BFO contract could help prevent the particular types of squeezes in the Brent market to date, but that squeezes were “endemic” to all commodity markets. Dr. Mabro stated that the limited number of players in the crude oil markets, together with the lack of transparency in the OTC markets, continued to present risks to the efficiency and transparency of the market.

<sup>118</sup> *Id.*

## IV. CASE STUDY: THE COSTS OF FILLING THE SPR IN SPRING 2002

*“In the long run commodity prices are governed but by one law—the economic law of demand and supply. The business of the trader in commodities is simply to get facts about the demand and the supply, present and prospective.”*  
—Edwin Lefèvre, *Reminiscences of a Stock Operator*, 1923

### A. Introduction

In February 2002, DOE reversed its policy of routinely granting requests to defer oil shipments to the SPR when crude oil prices were high and market supplies were tight.<sup>119</sup> DOE made this policy change after receiving a request by an oil company in February to defer shipments due to be delivered to the SPR later in the spring. Senior DOE officials instructed the SPR Office to deny the oil company’s request.

During DOE’s consideration of this deferral request, SPR career officials warned senior DOE officials, including the Deputy Secretary of Energy, that filling the SPR when oil prices were high or oil supplies were tight could drive oil prices higher, reduce U.S. commercial inventories, and hurt U.S. consumers and taxpayers, and advocated returning to the prior market-based policy.<sup>120</sup> Despite these warnings, DOE decided to keep the no-deferral policy in place for most of 2002. DOE made this decision without conducting any cost-benefit analysis of the new policy, without analyzing the relative costs of the new policy compared to the prior policy, and without preparing a detailed analysis of the new policy’s potential impact on overall U.S. oil supplies.<sup>121</sup> DOE has yet to track the actual costs associated with the new policy.

This Section provides a case study illustrating how the new SPR policy became a major factor contributing to higher crude oil prices in the United States in the spring of 2002, which led to increases in the price of various petroleum products, such as heating oil, diesel fuel, and jet fuel. It focuses on the period from mid-November 2001, when DOE began to add substantial amounts of oil to the SPR, through mid-May 2002, 6 months later. In particular, the case study traces how the large demands placed on the Brent market in late 2001 and early 2002 due to purchases of Brent cargoes for shipment to China and the SPR increased Brent prices in early 2002. DOE’s change in policy to not allow any deferrals of SPR

<sup>119</sup> See Section II of this Report.

<sup>120</sup> See Section V of this Report.

<sup>121</sup> The Subcommittee asked DOE to produce all documents containing any cost-benefit analysis related to the new policy, and was informed by DOE that none exist. In fact, DOE was unable to produce a single document explaining or justifying the policy decision to stop granting requests to defer oil shipments to the SPR.

shipments was a major factor contributing to the tightness of the Brent market in the spring of 2002, and helped boost the price of Brent and crude oils priced in relation to Brent.

The case study details how these higher Brent prices translated into higher costs for imported crude oil, lower U.S. crude oil inventory levels, and a sudden, sharp increase in the futures and spot prices for WTI crude oil in April and May. The case study then shows how this spike in the price of WTI drove up the price of heating oil, jet fuel, and diesel fuel, and briefly explains how increases in the prices of these petroleum products hurt U.S. consumers and businesses. The case study also shows how the elevated crude oil prices decreased U.S. refining margins and increased economic pressures on U.S. refiners in the second quarter of 2002. The case study finds that, in just 1 month alone, the new SPR fill policy imposed additional crude oil costs on U.S. consumers and businesses of between \$500 million and \$1 billion. These 1-month costs were the most directly visible and quantifiable of the additional costs created by the SPR program during these months.

DOE's actions to fill the SPR were not the only factor pushing up crude oil prices in the spring of 2002. Factors such as Saddam Hussein's 1-month suspension of Iraqi oil exports in April 2002, an 8-day oil strike in Venezuela, OPEC production cuts in the first quarter of 2001, and speculation and concern over impending war with Iraq also affected oil prices. Nonetheless, the evidence shows DOE's new policy to deposit oil into the SPR regardless of the price of oil was an additional major factor driving up U.S. oil prices and hurting U.S. consumers in the spring of 2002.

## **B. Analysis**

### **1. Large Amounts of Brent Crude Oil Were Put Into the SPR in Late 2001 and Early 2002**

From November 2001, when DOE began its recent program to fill the SPR to 700 million barrels, through the second quarter of 2002, most of the oil deposited into the SPR was Brent crude oil. As can be seen in Figure IV-1, Brent crude oil accounted for about 25 of the 29 million barrels, or nearly 85 percent, of the sweet crude deposited into the SPR during this period.<sup>122</sup> Although each company had the option of delivering a variety of light sweet crude oils to the SPR, each one deposited mostly Brent.

Crude oil traders interviewed by the Subcommittee stated that Brent was the most economical choice to place in the SPR for a number of reasons. These traders explained, first, that Brent is the most widely traded of the sweet crude oils that may be placed into the SPR, thus making it easiest to obtain. Secondly, some said that the variety of Brent instruments that are traded—21-day contracts, futures contracts, CFDs, and DFL swaps—makes it possible to hedge against changes in the price of Brent cargoes more precisely than for other types of crude oil. They stated that the use of other grades of crude oil presented basis risks (risks in the divergence between the price of the grade of crude oil and the price of dated Brent) that did not exist when Brent itself was used. Third, many of the companies depositing crude oil into the SPR during this pe-

<sup>122</sup>See also Figure II-3.

riod were major players in the Brent market, and their traders stated that acquiring physical Brent cargoes was, and is, a core part of their business. Fourth, according to some traders, it was physically easier to load large cargo ships at the Sullom Voe terminal than at other North Sea terminals. All of the traders interviewed by the Subcommittee staff denied their purchases of Brent were intended to increase oil prices by creating a shortage of Brent.

As can be seen in Figure IV-1, however, beginning in July 2002, much less Brent, relative to other sweet crudes, was placed into the SPR. It is not clear which additional factors made Brent so much more attractive for satisfying SPR obligations in the first half of 2002 than in the second half of the year. Section V.C. of this Report discusses whether oil companies and traders may have acquired large amounts of Brent crude oil in order to take advantage of the vulnerability of the Brent market to squeezes that existed through the first half of 2002.

Figure IV-1  
Sweet Crude Oil Delivered to the Strategic Petroleum Reserve  
November 2001 - September 2002

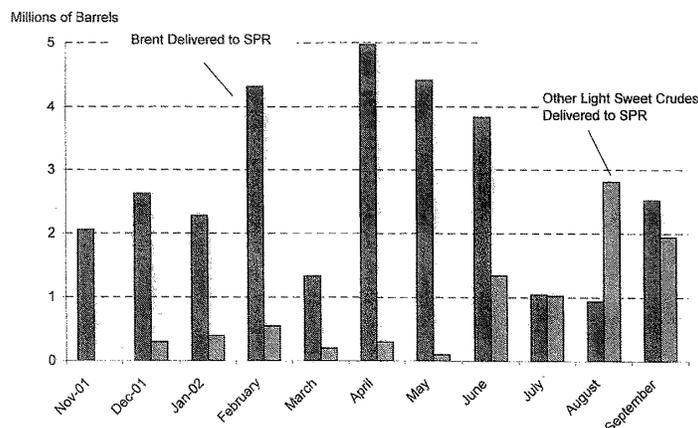


Fig. IV-1. Brent accounted for nearly 90 percent of the crude oil deposited into the SPR from late 2001 through the first half of 2002. Source of data: DOE.

In addition to the demand for Brent created by the SPR program, in early 2002, two companies purchased large amounts of Brent for shipment to China. Semptra Energy Trading and Sinochem acquired all of the Brent cargoes loaded in February 2002, and sent 20 of these cargoes to China. According to Semptra officials interviewed by the Subcommittee staff, a narrowing of the price differential between Brent and Dubai crude oils in late 2001 had made Brent relatively inexpensive compared to the sour Middle Eastern grades, which led Chinese refiners to purchase these large amounts of Brent. These shipments of Brent to China tightened market supplies just as DOE was announcing new contracts to fill the SPR. In the spring of 2002, with the Brent market unsettled by the large shipments to China, the market was further disturbed by reports that large amounts of Brent were being sent to the SPR.

Figures IV-2 and IV-3 show the shippers and destinations for the Brent cargoes loaded from January through May 2002. Koch's

Brent loadings in January, Shell's loadings in March and April, and BP's loadings in May went primarily to the SPR. Viewed together, Figures IV-1 through IV-3 demonstrate that an unusually large portion of the Brent crude oil produced from November 2001 through June 2002 was deposited in the Strategic Petroleum Reserve.

Figure IV-2  
Brent Production: Shippers  
January - May, 2002

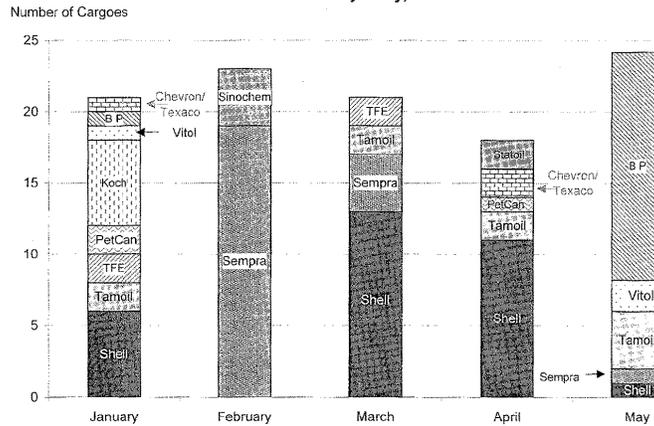


Fig. IV-2. In early 2002, several companies acquired large numbers of Brent cargoes. Source of data: Industry estimates.

Figure IV-3  
Brent Production: Destinations  
January - May, 2002

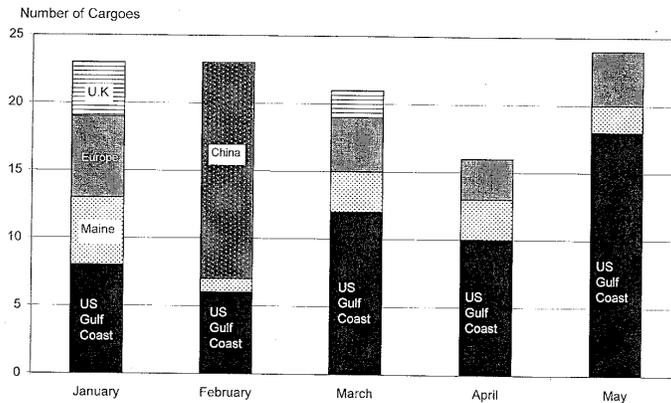


Fig. IV-3 In early 2002, large amounts of Brent crude oil went to China and the U.S. Strategic Petroleum Reserve, which is located in the U.S. Gulf Coast. Source of data: Industry estimates.

## 2. The Use of Brent To Fill the SPR Increased the Price of Brent Relative to WTI

The prices of the two major benchmarks, Brent and WTI, generally rise and fall together, reflecting changes in global supply and demand.<sup>123</sup> Brent normally costs about \$1.50 per barrel less than WTI.<sup>124</sup> From November 2001 through May 2002, the price of Brent rose significantly relative to the price of WTI.

Figure IV-4 shows the price of Brent rose significantly relative to WTI at about the same time as Brent cargoes began to be sent to the SPR. From 1992 through September 2001, the average difference in price between WTI and Brent was \$1.49; from November 2001 through May 2002, the average price difference was 75 cents. In other words, from November 2001 through May 2002, the price of Brent rose 75 cents relative to the price of WTI, cutting in half the normal differential between the two benchmarks.

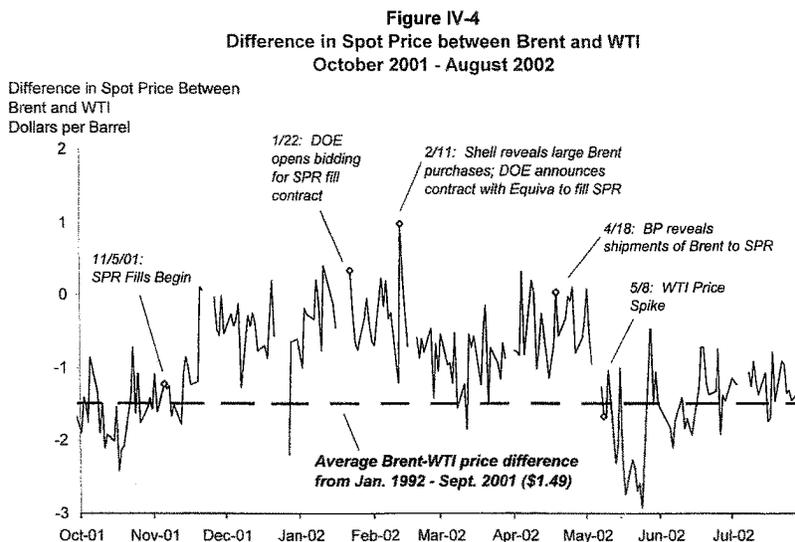


Fig. IV-4. Beginning in November 2001, shipments of Brent to the SPR increased the price of Brent relative to WTI. Source of price data: EIA.

Figure IV-4 also shows that on a number of dates in this period the price of Brent rose above the price of WTI. Several of these mini-spikes in the price of Brent appear to have been caused by announcements related to the SPR program: DOE's January 22, 2002 announcement opening the bidding for the RIK contract; DOE's February 11, 2002 announcement of the award the RIK contract for light sweet crude oil; and BP's announcement on April 18, 2002 that it was sending shipments of Brent to the SPR.

<sup>123</sup> See Figure III-9.

<sup>124</sup> See Section III.

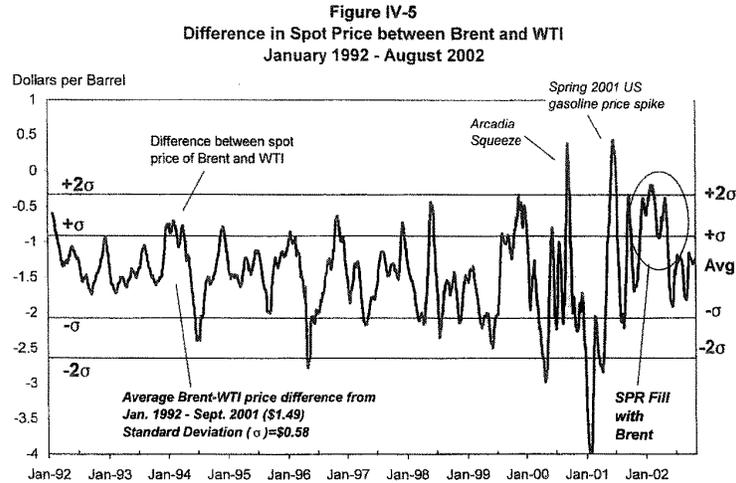


Fig. IV-5. From November 2001 through May 2002, Brent was more expensive relative to WTI for longer than any other period over the previous ten years. Prices reflect 20-day moving averages. Source of price data: EIA.

Figure IV-5 places the relative Brent price increase in a historical context. As can be seen from Figure IV-5, for the 7 months from November 2001 through May 2002, the price of Brent was higher in relation to WTI for a longer period than at any other time during the previous 10 years. For most of this 7-month period, the price of Brent had risen between 60 cents and \$1.20 in relation to WTI, which is between one and two standard deviations above the previous norm. For 2½ weeks in late January and early February 2002, the price of Brent rose to within 33 cents of WTI, which is a variation of more than two standard deviations from the norm. These are statistically significant price changes, and it is no mere coincidence that they took place at the same time as the demands placed on the Brent market from the SPR and China.

Additional price data provides evidence that the large demands on the Brent market from China squeezed the Brent market in January, and the large demand for Brent for the SPR squeezed the Brent market from mid-March through early May. As Section III explains, in a squeeze the supply of the physical commodity is in scarce supply as compared to the outstanding contracts to deliver, so that the “shorts” must either bid up the price of the commodity to obtain it for delivery or pay a high premium to the “longs” to cancel their obligation to deliver the commodity.<sup>125</sup> The fact that the Brent market was squeezed can be seen by examining the Brent-WTI relationship during this period, the price of near-term and longer-term Brent futures, and the price of Brent OTC DFL swaps. Viewed together, this evidence demonstrates the acquisition of large amounts of Brent in early 2002, due to shipments of Brent to China and the SPR, squeezed the Brent market, first in Janu-

<sup>125</sup>See also Appendix 1.

ary, and then again from mid-March to early May, in the same manner as the Arcadia shipments of Brent to India had done in 2000.

One classic sign of a market squeeze is a sharp and sudden increase in the price of one commodity in relation to the price of similar commodities. Figures IV-4 and IV-5 demonstrate that the price of Brent increased significantly relative to the price of WTI shortly after Brent began to be used for SPR deposits, and this relative increase continued into May 2002.

A second classic sign of a squeeze is a sudden increase in the near-term price of a commodity as compared to the price of the commodity farther in the future (backwardation), while the markets for other, similar commodities do not exhibit the same price behavior.<sup>126</sup> Figure IV-6 shows the difference between the first and second-month contracts for IPE Brent and NYMEX WTI futures from July 2000 through August 2002. This chart shows the two instances in early 2002 in which the near-term prices for Brent increased sharply, particularly in relation to the prices for second-month contracts (backwardation), while the WTI market did not exhibit a similar pattern. The first instance was due to the large number of Brent cargoes purchased for shipment to China, and the second instance was due to BP's acquisition of a large number of Brent cargoes for shipment to the SPR.<sup>127</sup> This contrast in the behavior of the Brent and WTI futures markets is evidence that squeezes in the Brent market occurred in January and from mid-March to early May 2002.

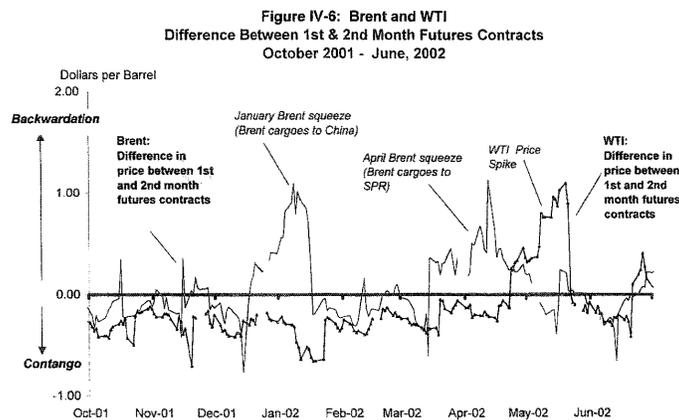


Fig. IV-6. In January and April 2002, the Brent market shifted from contango to backwardation, while the WTI market remained in contango, a classic signal of a squeeze in the Brent market. Source of data: IPE, EIA.

<sup>126</sup> See Section III.C.

<sup>127</sup> Although Shell also bought large amounts of Brent in early 2002, the Brent futures market did not show signs of a squeeze from these purchases, perhaps as a result of Shell's announcement on February 11, 2002, that it had "potential demand for all the Brents [cargoes] in March." See *The Oil Daily*, *Another Feared Brent Squeeze Sends Shock Across Energy*, February 13, 2002. Although Shell's announcement helped spike the Brent spot price to a \$1.00 premium over WTI on February 11, see Figure IV-4, the announcement also may have discouraged traders from selling futures contracts for delivering Brent, thereby avoiding a squeeze. See also Section IV.C.

The increase in the price of various Brent derivatives in the OTC markets is additional evidence the Brent market was squeezed in January and from mid-March to early May.<sup>128</sup> Figure IV-7 shows, for example, the difference between the price of the first month IPE Brent futures contract and the price of dated Brent. This price difference is equivalent to the price of a DFL swap, which is a Brent derivative traded on the OTC market. Figure IV-7 shows that in January and April the price of a Brent futures contract rose to nearly \$1.50 more than the price of a dated Brent cargo, indicating the “shorts” holding futures contracts requiring delivery of Brent were being forced to pay a premium to the “longs.” The monthly pricing patterns for DFL swaps from October 2001 through May 2002, as seen in Figure IV-7, are similar to the pattern for DFL swaps during the Arcadia squeeze in August 2000, as shown in Figure III-11. An increase in the price of a DFL swap, by itself, does not indicate a squeeze; however, a squeeze will result in an increase in the price of a DFL swap.<sup>129</sup>

Figure IV-7  
October 2001 - June 2002

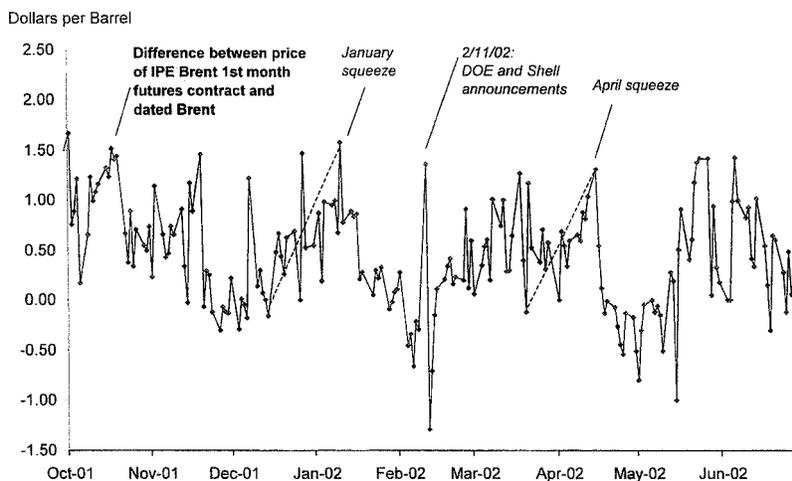


Fig. IV-7. On several occasions, from late 2001 through mid-2002, the price of the 1st month Brent contract rose significantly relative to the price of dated Brent. This data is consistent with a market squeeze. Source of data: IPE, EIA.

The price spikes in the futures and OTC contracts for Brent in January and throughout April 2002 cannot be explained by global oil supply and demand. The global economy was in a slump. The crude oil markets had yet to recover from the drop in demand following the September 11, 2001 terrorist attack on the United States. Indeed, the WTI futures market reflected these fundamentals—that current demand for crude oil was lower than anticipated

<sup>128</sup> See Section III.B. for an explanation of these Brent derivatives.

<sup>129</sup> See Horsnell and Mabro, *supra*, at 130-132, for a discussion of the effect of a Brent squeeze on these derivatives.

future demand, and near-term prices were lower than prices further in the future (contango). The Brent market, however, was just the opposite (in backwardation), with higher near-term prices reflecting the immediate demands on Brent supplies from China and the SPR, rather than overall global supply and demand.

In sum, the large number of shipments of Brent sent to the SPR and China, from November 2001 through May 2002, significantly increased the price of Brent relative to WTI, caused the near-term price for Brent to rise relative to the price of more distant Brent futures contracts (backwardation) for extended periods, and caused significant price increases in the OTC market. From mid-March through early May 2002, the demands placed on the Brent market by the SPR program squeezed the Brent market.<sup>130</sup>

### **3. Higher Brent Prices Increased the Price of Crude Oil Imported into the United States**

Increases in the price of Brent relative to WTI led to relative increases in the price of a variety of crude oils priced off Brent. Most of the crude oils priced off Brent are sold in term contracts that set the price of the oil at a fixed differential to the price of dated Brent. Generally, these differentials are fixed for the term of the contract, and are not renegotiated during the term of the contract. Squeezes and other disruptions in the Brent market that increase the price of dated Brent, therefore, generally increase the cost of crude oil priced off Brent under term contracts. Since term contracts are individually negotiated and not traded on any exchange, however, information on the terms of these contracts is unavailable, and the total impact of Brent price increases cannot be measured.<sup>131</sup>

Crude oil spot market data, however, provides evidence of how higher Brent prices increased the price of crude oils priced in relation to Brent. Although comprehensive and reliable spot price data is not available, the spot price of Nigerian Bonny Light, a major crude oil imported into the United States, is commonly reported by trade publications.

Bonny Light is produced in Nigeria and is usually priced at a discount to Brent. The price of Bonny Light is generally reflective of the price of other Nigerian crudes. The United States imports large amounts of crude oil from Nigeria, which is the fifth largest exporter of crude oil to the United States, sending, on average in 2001, about 850,000 barrels daily to refiners in the United States.<sup>132</sup> An increase in the cost of Nigerian imports, therefore, has significant effects for refiners and consumers in the United States.

Data on spot market transactions shows the price of this Nigerian crude oil closely tracked the price of Brent during the period examined, from October 2001 through June 2002. Figure IV-8

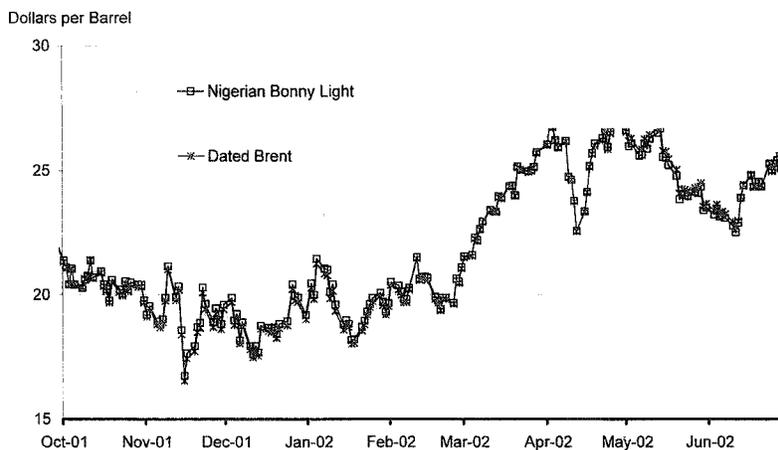
<sup>130</sup>In interviews with the Subcommittee staff, officials from the London IPE and the U.K. FSA agreed with the characterization that the Brent market was squeezed in January and April 2002.

<sup>131</sup>On April 24, 2002, the Petroleum Intelligence Weekly, in the article *Beyond Hoarding*, wrote, "Buyers of less transparent or term contract barrels have been less able to protect themselves from the spiking benchmark."

<sup>132</sup>See Figure III-3.

shows how the price of Bonny Light moved in tandem with the price of Brent during this period.

**Figure IV-8**  
Price of Dated Brent and Nigerian Bonny Light  
October 2001 - June 2002

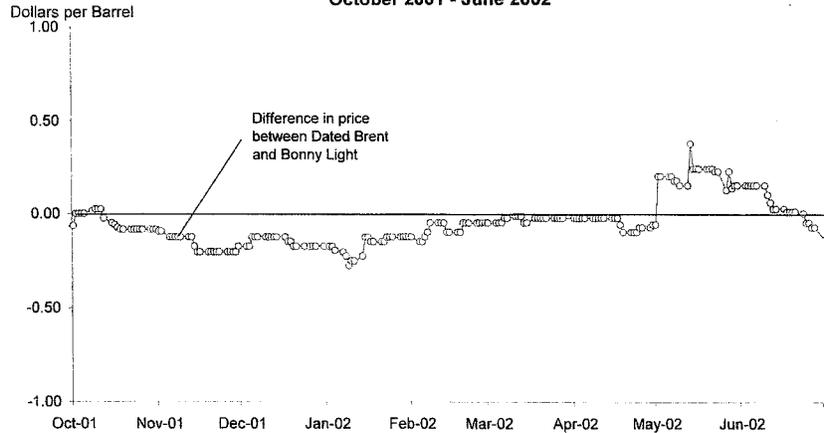


**Fig. IV-8.** Nigerian crude oils are priced at a differential to dated Brent. The price of Nigerian Bonny Light and other Nigerian crude oils follow the price of dated Brent.  
Source of price data: Platts

Figure IV-9 shows the difference between the price of dated Brent and the price of Bonny Light over the same time period. The data shows that the differential between the price of Bonny Light and the price of dated Brent varied by only a few cents per barrel from late 2001 through May 2002. This data demonstrates that as the price of dated Brent rose during this time period, the price of Bonny Light rose as well.<sup>133</sup> Hence, as the price of Brent rose relative to WTI, the price of Nigerian crude oils rose too.

<sup>133</sup>Due to demand from Asia, Nigeria had little incentive to discount its crude oil for prospective purchasers in North America. The narrowing of the Brent/Dubai differential due to OPEC production cuts in 2001 led Asian refiners to increase their purchases of Atlantic Basin sweet crudes, including Nigerian crudes. In light of the increased Asian demand for west African crudes, most west African exporters, such as Nigeria, did not provide discounts to refiners in the United States. According to one press report, "Most West African crudes have managed to defend differentials to international benchmark dated Brent reasonably successfully in a tricky market." Energy Intelligence Briefing, *Spring West African Barrels Pointed at US, Not Asia*, April 23, 2002.

**Figure IV-9**  
**Difference in Price**  
**Dated Brent and Nigerian Bonny Light**  
**October 2001 - June 2002**



**Fig. IV-9.** In early 2002, the spot market differential between dated Brent and Nigerian crude oil was nearly constant. As Brent prices rose relative to WTI, so did the price of Nigerian crude oil. Source of price data: Platts.

In sum, the use of so much Brent to fill the SPR was a major factor increasing not only the price of Brent relative to WTI, but also the price of other sweet crude oils priced off Brent. Since both Brent and other crude oils priced off Brent, like Bonny Light, are regularly exported in large amounts to the United States, these increases significantly raised the costs of importing crude oil in the latter months of 2001 and the first part of 2002.

#### **4. Higher Costs for Imported Crude Oils Led to Fewer Imports**

The most immediate effect on the U.S. crude oil market of the Brent price increases just described was to increase the relative price of crude oil imports. From November 2001 to May 2002, the price of Brent rose to within 50 cents of WTI on 48 different days, and on 17 days was more expensive than WTI. As a rule of thumb, it is uneconomical to import Brent or other Atlantic basin sweet crudes when Brent is priced within about \$1.50 of WTI. Although other factors mattered too, such as transatlantic shipping rates, grade differentials, and the price of other U.S. Gulf Coast crudes, like Louisiana Light Sweet (LLS), the unprecedented magnitude of the increases in the price of Brent relative to WTI beginning in late 2001 made Brent imports significantly more expensive when compared to domestic grades or to oil already purchased and stored in U.S. commercial inventories.

A number of contemporaneous reports in oil industry trade publications explain how relatively higher prices for Brent affected U.S. crude oil imports. For example, several of these trade press reports state that on a number of occasions during this period the increases in the price of Brent relative to WTI “closed the arbitrage.”

On January 14, 2002, *Weekly Petroleum Argus* reported that Sempra's acquisition of a large number of Brent cargoes from BP "pushed dated Brent to a premium over WTI, shutting off the arbitrage that allows crude cargoes to sail from Europe and west Africa to the US."<sup>134</sup>

On February 4, *Petroleum Argus* reported that the January Brent squeeze, caused by Sempra's shipments of Brent cargoes to China, had distorted Brent-related trade and cut off shipments of Brent and other North Sea crudes to the United States. "Trade on Brent-related crudes, particularly other North Sea grades, became unhealthily opaque as buyers and sellers struggled to avoid the price spike. Brent's inflated strength forced some European refiners to cut runs. And dated Brent moved to an abnormally wide premium over WTI—from its customary discount—choking off the flow of cargoes to the U.S."<sup>135</sup>

Following Shell's announcement that it had enough orders to purchase all of the Brent cargoes in March, most of which were deposited into the SPR, the transatlantic trade again was disrupted. "North Sea trade came to a standstill as the market waited for Shell's intentions to become clear, pressuring unsold late February loading cargoes. . . . The prospect of another Brent trading play reduced the US appetite for Brent-linked North Sea and west African crudes."<sup>136</sup>

In mid-March, *The Oil Daily* reported the increase in the price of Brent relative to WTI had caused a decline in U.S. imports, putting upward pressure on domestic crude oil prices. "The narrow arbitrage between WTI and North Sea Brent, of about 25 [cents] on Friday, has been working against competition from foreign barrels, contributing to keeping values for most US grades steady last week."<sup>137</sup>

In early April, the *Financial Times Business Recorder* reported that a brief drop in the price of dated Brent had opened up the trans-Atlantic trade:

Crude oil traders are scrambling to exploit a brief opening in the trans-Atlantic arbitrage for European crude, taking advantage of a fall in benchmark dated Brent despite steamy futures prices. As much as 10 million barrels of sweet North Sea grades have recently been booked to sail west in April, fleeing the severely depressed European market, but the opportunity could be short-lived if wet Brent climbs again as many traders expect.<sup>138</sup>

Crude oil traders quoted in this article attributed the higher dated Brent prices choking the transatlantic trade to the filling of the SPR: "The levels are all distorted because you don't have fun-

<sup>134</sup>The transaction involved a swap of 60 cargoes, a volume of oil greater than the entire amount of Brent produced in February. *Weekly Petroleum Argus*, *Brent Blip Squeezes Transatlantic Traffic*, January 14, 2002.

<sup>135</sup>*Petroleum Argus Global Markets*, *Ending Brent's Eternal Games*, February 4, 2002.

<sup>136</sup>*Petroleum Argus Global Markets*, *Prices Jump on Squeeze Talks*, February 18, 2002.

<sup>137</sup>*The Oil Daily*, *US Sweet Grades Firm, Sours Lose Ground While WTI-Brent Arbitrage Remains Closed*, March 18, 2002.

<sup>138</sup>*Business Recorder*, *Never Mind Futures, Europe and US Crude Arb Opening*, April 5, 2002. From mid- to late-March, the Brent-WTI differential averaged about 90 cents.

damentals, you have the SPR commitments that are affecting Dated,' said one trader with a US refiner."<sup>139</sup>

In late April, *Petroleum Argus* reported the April Brent squeeze was distorting the transatlantic trade.<sup>140</sup> "A squeeze on Atlantic basin benchmark Brent caused the grade's third price distortion this year, and pushed prices \$2/bl higher last week. This left US benchmark WTI at a 35 cents/bl discount to Brent in May and confused transatlantic arbitrage economics. Sellers of Brent-linked North Sea grades were forced to slash their offers relative to dated Brent to keep cargoes moving to the US."<sup>141</sup>

Still another trade publication wrote about the decline in transatlantic Brent trade in late April due to higher prices. "The victim of a trading squeeze, liquidity in the physical Brent market had all but dried up and price transparency had effectively been limited to the often manipulated contract-for-difference market. . . . A delay in the release of the May loading program and the lack of transparency as well as the steeply backwarddated dated Brent pricing profile acted as a brake on trade."<sup>142</sup>

U.S. import data over this period shows a striking decline in imports of North Sea and west African crude oils priced off Brent. Figure IV-10 shows that this decline in imports began in December 2001 and continued through April 2002. This time period corresponds with the period during which the price of dated Brent rose, on average, 75 cents relative to WTI, and in which the transatlantic trade was totally disrupted several times due to the squeezes in the Brent market.

Figure IV-10 also shows that Nigerian crude oil imports dropped the most of the Atlantic Basin crude oils imported into the United States during this period. From October 2001 through February 2002, imports of crude oil from Nigeria declined by 33 percent. In April 2002, imports from Nigeria were 45 percent lower than in April 2000, and 56 percent lower than in April 2001. This data is consistent with the data in Figures IV-8 and IV-9 showing the spot price of Nigerian Bonny Light moving in tandem with the price of dated Brent, thereby become relatively expensive compared to WTI. During this period the amount of crude oil from the United Kingdom also dropped significantly compared to previous U.K. import levels. Not including Brent crude oil sent to the SPR in April 2002, imports of crude oil from the United Kingdom were 20 percent lower than in April 2001, and 65 percent lower than in April 2000.

<sup>139</sup> *Id.*

<sup>140</sup> See Figures IV-6 and IV-7.

<sup>141</sup> Petroleum Argus Global Markets, *Brent Squeeze Wreaks Havoc*, April 22, 2002. The article also noted, "Advance warning of the Brent squeeze had been provided by the short-term swaps market for dated Brent and Brent contracts for differences (CFDs). They indicated a late April and early May price spike."

<sup>142</sup> Nefte Compass, *Crude Oil: Brent Squeeze Hypes Benchmark*, April 23, 2002.

Figure IV-10  
U.S. Imports of Atlantic Basin Sweet Crudes Priced Off Brent  
January 2000 - August 2002

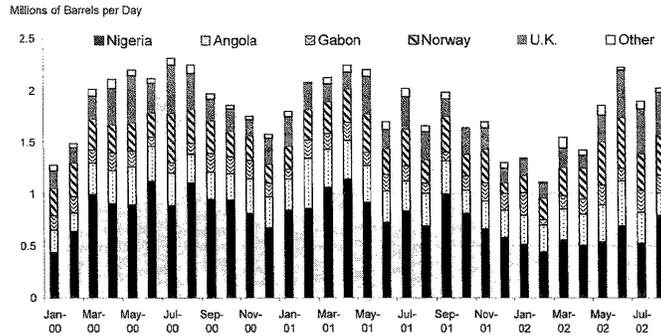


Fig. IV-10. From December 2001 through April 2002, imports of Atlantic Basin sweet crudes priced off Brent were at the lowest level in two years. Imports in February 2002 were nearly 1 million barrels/day lower than during February 2001 (48% decrease), and about 400,000 barrels/day lower than in February 2000 (26% decrease). In April, Atlantic basin imports were 35% lower than in April 2001, and 33% lower than in April 2000. Source of data: EIA.

Crude oil imports into the United States declined more in the first half of 2002 than in any of the comparable time frames over the past several years. Figure IV-11 shows that from January through March 2002, average daily imports declined, whereas over a similar 3-month period in the years 1999 through 2001 average daily imports were increasing. Additionally, average daily U.S. imports in April 2002 were substantially lower than in April 2001 and April 2000.

The overall level of U.S. imports in early 2002 also was affected by a general economic slowdown following the September 11 tragedy, so the reduction in imports seen in Figure IV-11 was also caused by a decline in demand. Higher import prices were nonetheless another major factor contributing to this reduction.

Figure IV-11  
Total U.S. Crude Oil Imports  
Daily Average, by Month, First Half of Each Year  
1999 - 2002

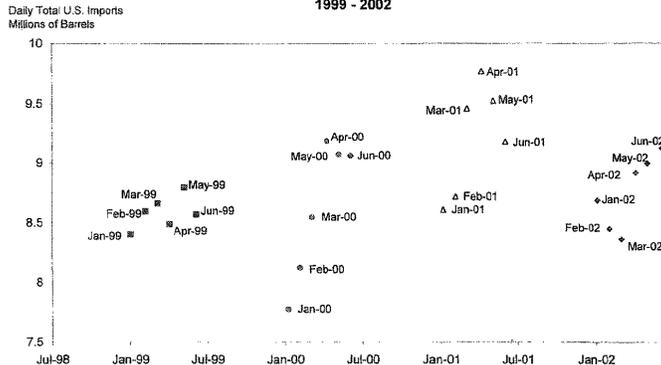


Fig. IV-11. In the first half of 2002, total U.S. crude oil imports were lower than in comparable periods of previous years. Source of data: EIA.

Additional evidence that the level of overall imports was reduced largely as a result of the reduction in imports priced off Brent is provided in Figure IV-12, which shows the level of U.S. imports priced off WTI. From January 2002 through April 2002, at the same time the level of imports priced off Brent declined by 500,000 to 1 million barrels per day,<sup>143</sup> no parallel decline took place in the amount of imports priced off WTI.

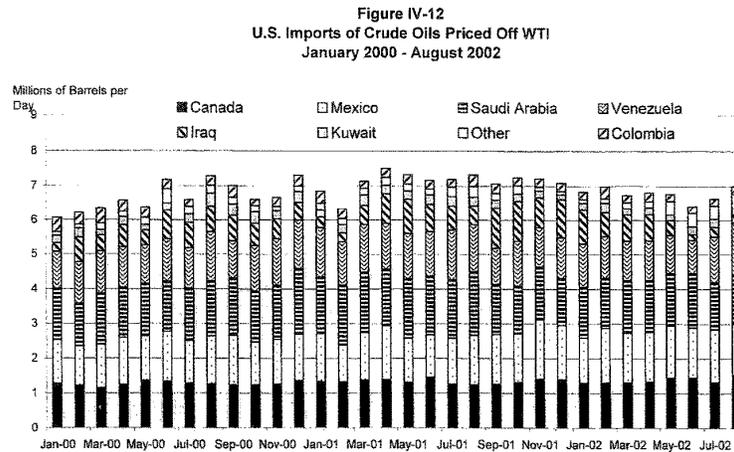
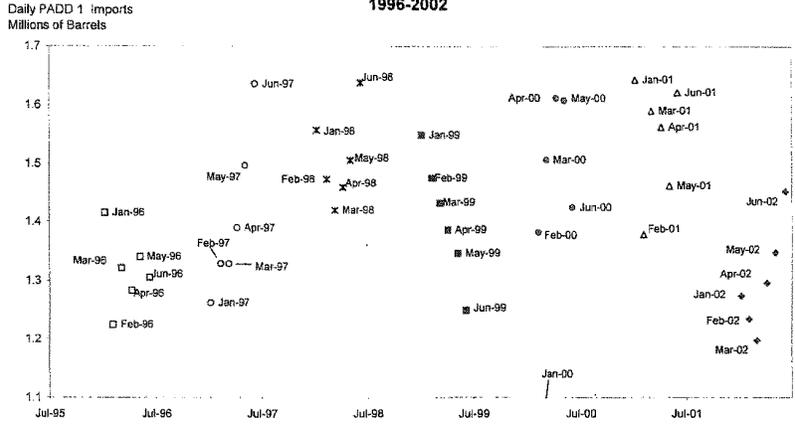


Fig. IV-12. Imports of Western Hemisphere and Middle Eastern crude oils priced off WTI remained nearly constant in the first half of 2002. Source of data: EIA.

The regional breakdown of U.S. crude oil imports provides further evidence that reduced imports of Brent-priced sweet crudes were responsible for the most of the decrease in U.S. crude oil imports during the first 5 months of 2002. Figures IV-13, IV-14, and IV-15 provide a month-by-month comparison of daily import levels into the East Coast (PADD 1), the Midwest (PADD 2), and the Gulf Coast (PADD 3). Of these three regions, refiners on the U.S. East Coast were the most sensitive to the price of Brent, as a number of East Coast refineries rely heavily on sweet crudes from the United Kingdom, Norway, and west Africa. Refiners in the Midwest (PADD 2) use both light, sweet crudes and heavy, sour crudes, and some Midwestern refineries are able to vary the types of crudes run through the refinery as the economics of the crude oil and refined product markets vary. Figures IV-13, IV-14, and IV-15 show that in the first several months of 2002 the East Coast, which is the refining region most sensitive to the price of Brent, experienced the most significant drop in imports, and that Midwestern refiners, who also rely heavily on light, sweet crudes, also cut back on imports significantly.

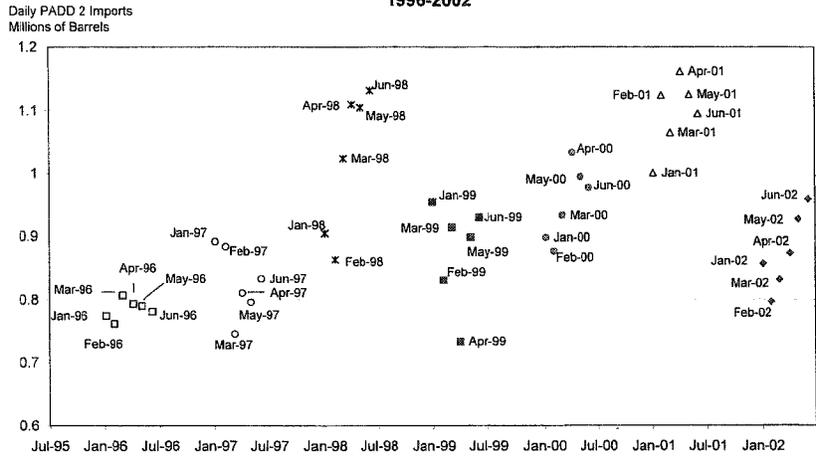
<sup>143</sup> See Figure IV-10.

**Figure IV-13**  
**East Coast (PADD 1) Crude Oil Imports**  
 Daily Average, by Month, First Half of Each Year  
 1996-2002



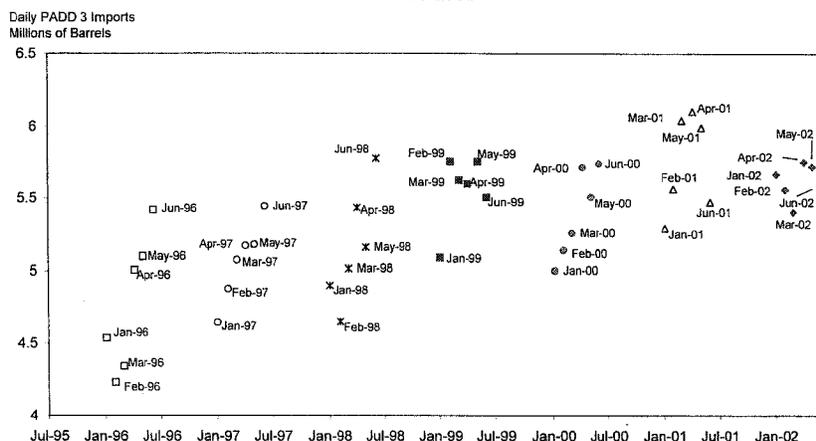
**Fig. IV-13.** In the first half of 2002, East Coast (PADD 1) imports declined substantially. Source of data: EIA.

**Figure IV-14**  
**Midwest (PADD 2) Imports**  
 Daily Average, by Month, First Half of Each Year  
 1996-2002



**Fig. IV-14.** In the first half of 2002, Midwest (PADD 2) imports declined substantially. Source of data: EIA.

**Figure IV-15**  
**Gulf Coast (PADD 3) Imports**  
**Daily Average, by Month, First Half of Each Year**  
**1996-2002**



**Fig. IV-15.** In the first half of 2002, Gulf Coast (PADD 3) imports did not decline as substantially as imports into other regions. Source of data: EIA.

Although a number of other factors also affected the price and supply of crude oil during the first part of 2002, these factors did not affect U.S. import levels nearly as much as the relative increase in the price of Brent during the first 5 months of 2002. For example, although in early April Saddam Hussein announced a suspension of Iraqi oil exports for 30 days, imports from Iraq did not decline below average levels until May 2002. As late as April 2002, the United States was importing over 750,000 barrels per day from Iraq, nearly at the 2001 daily average of 795,000 barrels per day.

Despite growing political unrest and an 8-day strike by oil workers in Venezuela, imports from Venezuela ranged from 1.1 to 1.25 million barrels per day from January through May 2002, which is roughly equivalent to the Venezuelan imports over the same period in 2000, and only slightly less than the 1.29 million barrels per imported daily, on average, in 2001. The strike spiked the market for several days, but the strike was short-lived and there were no long-term effects upon U.S. supplies from the temporary suspension of exports.<sup>144</sup>

<sup>144</sup> See, e.g., Bloomberg News, *Oil Prices Fall as End Seen for Venezuelan Strike*, National Post April 23, 2002. Additionally, OPEC representatives signaled to the market that OPEC would work to stabilize oil prices if the disruption in Venezuela continued. "If the drama in Venezuela continues we could have a problem and we might have to put more oil on the market," one OPEC official stated. U.S. Secretary of Treasury O'Neill said "it appeared that Saudi Arabia and other oil producers were 'doing whatever production it takes' to stay within a price band." Matthew Jones and Andy Webb-Vidal, *OPEC Moves to Limit Impact of Venezuela, Iraq*, Financial Post, April 11, 2002. See also Nadim Kawach, *UAE Saudi Arabia Assure Oil Supply*, Gulf News, March 21, 2002.

Contemporaneous trade press reports also state that the Venezuelan strike had no effect upon U.S. crude oil producers operating in Venezuela. Petroleum Finance Week, *As Chavez Returns, Venezuela's Oil Industry Tries to Get Back to Normal*, April 22, 2002.

Some observers attributed the reduction in U.S. imports in early 2002 to OPEC production cuts announced in January 2002. For example, in its weekly report released on April 24, the DOE's Energy Information Administration (EIA) linked the reduction in imports to lower OPEC production quotas:

U.S. crude oil imports over the last 4 weeks have averaged just 8.8 million barrels per day, or nearly 850,000 barrels per day less than over the same period last year. With OPEC 10 (excluding Iraq) crude oil production in the first quarter of 2002 averaging 22.6 million barrels per day, this is the lowest quarterly average since the second quarter of 1992! With less crude oil being produced by these countries after a series of cuts in production quotas, they are exporting less, and so it is no surprise to see the world's largest importing country experiencing declining imports.<sup>145</sup>

EIA monthly data indicates, however, that the OPEC production cuts were not nearly as significant a factor as initially reported. Of the 850,000 barrel-per-day reduction noted in the EIA's April 24 report, reduced imports of Atlantic Basin sweet crudes priced off Brent accounted for nearly all this amount—815,000 barrels. Reductions from Nigeria alone accounted for nearly 630,000 barrels, or about 70 percent, of this reduction. See Figure IV-10.

Of the Atlantic Basin countries exporting crude oil, only Nigeria is a member of OPEC. The reason for the large reduction in Nigerian exports appears not to be the OPEC quotas, but the relatively high price of Nigerian crude oil priced off dated Brent. Even with Nigeria's initial adherence to the OPEC quotas, there was a surplus of Nigerian crude because of its inflated price and depressed demand. In early March, one publication reported, "At this time of the month, most of Nigeria's crude oil cargoes designated to load in the Apr. 1-10 time frame should have found permanent homes. They haven't. . . . To be fair, Nigerian barrels are not alone in having difficulties finding buyers. The physical market is well and truly in the dumps."<sup>146</sup> Similarly, in early May it was reported:

The climate for selling Nigerian oil has taken a severe turn for the worse in recent weeks, judging by the May loading schedule for Nigeria's eight main crude systems. The schedule indicates at least 6 May cargoes still unsold, while appetite for early June remains lackluster. Some tankers will soon be steaming toward the U.S. Gulf Coast—port of last resort—in hopes that conditions will have improved before they arrive. But current prospects for placing cargoes at the right price look slim, as crude supplies appear well in excess of demand in the United States<sup>147</sup>

<sup>145</sup> EIA, *This Week in Petroleum*, April 24, 2002. In its report for the previous week, EIA had also stated, "most of the reason for the crude oil import deficit rests with OPEC's decision to cut their quotas by another 1.5 million barrels per day (effective on January 1), which has clearly reduced imports into the United States." EIA, *This Week in Petroleum*, April 17, 2002.

<sup>146</sup> Energy Intelligence Briefing, *Nigeria Ensures OPEC Compliance in March and April*, March 7, 2002.

<sup>147</sup> Energy Intelligence Briefing, *Nigerian Crudes Fail to Impress US Buyers—So Far*, May 7, 2002.

EIA's initial analysis did not reflect the extent to which global demand was sharply lower in early 2002 than in early 2001. "Even in a period when the Iraqi embargo and Venezuelan disruption took barrels off the market unexpectedly, demand fell even faster—by 1.4 percent and 1.5 percent on the year in March and April, respectively."<sup>148</sup> In March, global production exceeded global demand by 400,000 barrels per day, and in April by 700,000 barrels per day.<sup>149</sup> By contrast, in April 2001, global production had exceeded demand by only 100,000 barrels per day. With relatively more crude oil available on the global market in 2002 than 2001, it does not appear that the OPEC cuts relative to 2001 production levels were responsible for the reduced levels of imports into the United States during this period.<sup>150</sup>

In short, political events affecting the global crude oil markets in early 2002 did not create shortages of crude oil relative to demand during that period. Rather, in light of the reduced global demand for crude oil, there were ample supplies of crude oil available for U.S. refiners.

Moreover, the global political factors just described affected the global supply and demand for crude oil, not just the North American market. Thus, although these factors contributed, to some extent, to the overall increase in the price of crude oil in the first 5 months of 2002, and the overall amount of oil supplied, none of these factors explains the dynamics of the crude oil trade between the United States and the rest of the world during this period. This trade is driven by the price differentials between the WTI and Brent benchmarks, rather than absolute price levels or absolute supply numbers. Global political events do not explain the divergences between the Brent and WTI markets beginning in late 2001, when the price of Brent rose significantly relative to WTI. The most significant factor leading to the reduced U.S. crude oil imports in early 2002, other than the overall decline in demand, was the reduction in light sweet crude oil imports priced off Brent due to higher relative Brent prices resulting from the use of Brent to fill the SPR.

### **5. High-Priced Imports Led U.S. Refiners to Use Crude Oil in Existing Inventories**

The relatively high cost of Brent-based imports had two major effects. First, U.S. refiners able to substitute less expensive WTI-based crudes did so, thereby increasing the imports of WTI-based crudes. Secondly, U.S. refiners increasingly relied upon crude oil already in their inventories to meet demand and build stocks of gasoline in anticipation of the upcoming seasonal surge in gasoline usage.

In late March, the EIA noted that crude oil imports were decreasing at the same time U.S. refinery runs were increasing in anticipation of the late spring and early summer driving season. "With crude oil imports last week at the lowest level in more than a year (partly due to significant fog-related closures in the Houston

<sup>148</sup>The Oil Daily, *Supply-Demand Fundamentals Far From Bullish*, May 23, 2002.

<sup>149</sup>Petroleum Intelligence Weekly, *Oil Prices Fly in Face of Fundamentals*, May 22, 2002.

<sup>150</sup>As discussed in Appendix 3, the OPEC reductions did affect the price differential between heavy and light crude oils.

Ship Channel) and refinery runs increasing, last week saw a drop in crude oil stocks (4.5 million barrels) not seen since the week ending October 12, 2001. If crude oil imports continue to remain low, while inputs into refineries increase, crude oil stocks would continue to fall.”<sup>151</sup>

Even after the fog lifted from the Houston Ship Channel, U.S. crude oil imports continued to drop while use of crude oil in U.S. inventories increased. Total U.S. inventories declined from about 325 million barrels on April 5 to about 319 million barrels on April 12, and again declined from late April until mid-May. From April 5 to April 12 Gulf Coast (PADD 3) inventories also fell, from about 165 million barrels to about 161 million barrels, and Midwest (PADD 2) inventories slipped from just over 70 million barrels to about 69 million barrels.

### **6. Decreasing U.S. Inventories Spiked the Price of WTI**

In early April, EIA warned of increasing crude oil prices due to reduced imports and increasing refinery runs:

The level of crude oil imports to supply increasingly higher refinery output of petroleum products, particularly gasoline, has become a major concern over the past several weeks. In order to stave off a repeat of last year’s steep run up in motor gasoline prices, crude oil supplies will need to be maintained at a rate that keeps up with anticipated strong demand for gasoline and other petroleum products as the U.S. economy recovers from its recent downturn. . . . If the discrepancy between crude imports and refinery runs continues to widen as the summer driving season nears, both crude and product stocks are expected to drop sharply, pressuring up further gasoline and other petroleum product prices.<sup>152</sup>

Two weeks later, EIA’s weekly report warned: “So, at a time when imports are usually increasing to supply increased refinery production as the gasoline season begins, this year, crude oil imports are declining. And while crude oil inventories started this period in much better position than in the previous 2 years, at this rate, it won’t be long until crude oil inventories become tight once again, thus putting more pressure on crude oil prices.”

Indeed, in mid-April the crude oil import data released by EIA and the American Petroleum Institute (API) affected the market in just the manner forecast. On April 16, 2002, API released its weekly industry data report showing a drop in U.S. crude oil inventories for the previous week. Immediately after the release of this inventory data, the price of the next-month WTI futures contract on the NYMEX rose about 20 cents per barrel. Over the next several days the next-month WTI futures contract continued to rise. A week later, on April 23, the WTI contract for delivery of crude oil in June (“the June contract”) became the next-month contract. At the same time, API and EIA data continued to show a decline in Midwest (PADD 2) inventories. Traditionally, Midwest (PADD 2) aggregate crude oil inventories have strongly influenced the price of the

<sup>151</sup> EIA, *This Week in Petroleum*, March 27, 2002.

<sup>152</sup> *Id.*, April 3, 2002.

NYMEX WTI contract, because they influence the supply and demand balance for crude oil at the WTI delivery location at Cushing, Oklahoma. Generally, the WTI market interprets a decline in PADD 2 inventories as a sign of a shortage of available crude oil in the region, and hence such a decline will lead to an increase in the price of WTI.

The WTI market reacted in just this manner in late April. Just at the time the June WTI contract became the next-month contract, the price of this contract jumped above the price of the next month contract (shifting the market from contango to backwardation), indicating the market believed there was a near-term shortage in supply. The increase in the near-term WTI futures price took place at the same time as the April squeeze in the Brent market was dissipating, lowering the price of the near-term Brent futures contract (shifting the Brent market from backwardation to contango). See Figure IV-6.

Many traders viewed the sudden upward shift in the WTI market in light of the Brent market's move in the opposite direction as evidence of a squeeze in the WTI market. For example, on May 8, 2002, *Reuters* reported:

The premium for U.S. crude oil prices over other international grades exploded higher on Wednesday as dwindling supplies in the pivotal Midwest region made the market more vulnerable to supply squeezes, traders said. Oil traders said that a market play by oil major BP was a driving force behind the sudden U.S. price run-up—just the latest in a series of trading maneuvers that has distorted prices on both U.S. and European markets this year.<sup>153</sup>

In reality, however, there were ample supplies of crude oil available to Midwestern refiners, indicating the sudden price increase in the WTI market was not caused by a squeeze. In interviews with the Subcommittee staff, traders and officials with a number of companies supplying and purchasing crude oil stated there were no shortages of crude oil at this time. According to these traders and officials, ample supplies of crude oil in the Gulf Coast were available for Gulf Coast and Midwest refiners, and the crude oil pipelines from the Gulf Coast to the Midwest were not filled to capacity.

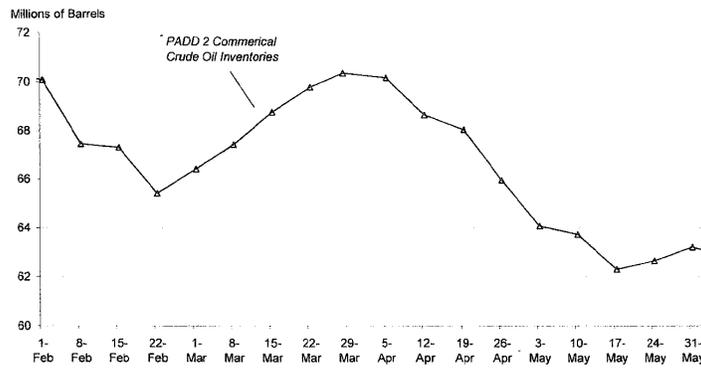
These traders and officials stated that Midwestern inventories declined not because of any physical shortages of crude oil, but rather because the imports that were reaching the Gulf Coast ports were too expensive for Midwestern refiners. According to traders interviewed by the Subcommittee, because crude oil priced off Brent arriving at the Gulf Coast already was expensive compared to WTI, it was uneconomic for Midwestern refiners to pay the additional costs to transport the crude oil by pipeline from the Gulf Coast to their refineries in the Midwest. These traders state they

<sup>153</sup> Reuters, *U.S. Crude Rockets as BP Completes Brent Play*, May 8, 2002. Another publication stated: "Market whispers last week focused on evidence of yet another wet-barrel crude squeeze, knocking the futures markets out of whack as they used physical trades as a guide. . . . The smoking gun: The forward price curve for Brent is in contango, or upward sloping, while the forward curve for West Texas Intermediate showed a 90 cents backwardation." Petroleum Intelligence Weekly, *Marketview: Smoke and Mirrors*, May 15, 2002.

had plenty of crude oil in the Gulf Coast, and would have sent it to the Midwest if it were economical to do so.

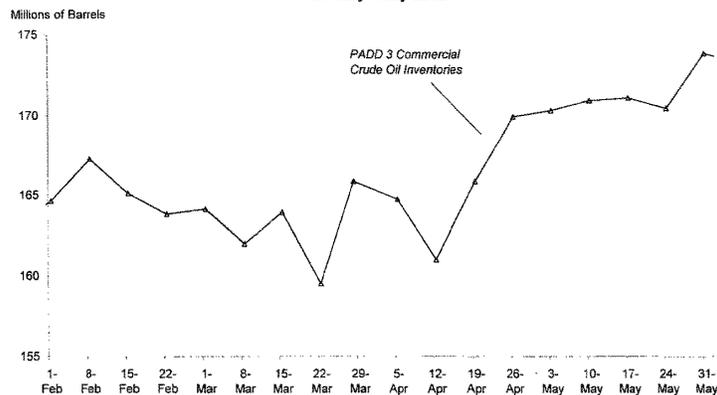
Instead of buying the relatively expensive imports, Midwestern refiners used crude oil from their existing inventories. As a result, Midwestern inventories declined. Figure IV-16 shows the decline in Midwestern (PADD 2) inventories during this period. Figure IV-17 shows that during this same period Gulf Coast supplies were increasing, indicating the decline in Midwestern inventories was not due to any shortage of crude oil, but rather because it was not economical to ship the relatively high-priced imports arriving on the Gulf Coast up to the Midwest.

**Figure IV-16**  
Midwest (PADD 2) Crude Oil Inventories  
February - May 2002



**Fig. IV-16.** As a result of the relative high price of imports, Midwestern refiners drew down existing inventories. Source of data: EIA

**Figure IV-17**  
Gulf Coast (PADD 3) Crude Oil Inventories  
February - May 2002



**Fig. IV-17.** At the same time as Midwestern inventories declined, crude oil piled up unsold on the Gulf Coast. Source of data: EIA

“Refiners do not corroborate the widespread interpretation that the US Midwest is short of crude, and neither do the data,” the *Oil Market Intelligence* wrote on May 21.<sup>154</sup> The article blamed the relatively high near-term prices in the WTI market on the reluctance of Midwestern refiners to purchase crude oil: “They are not keen on buying the incremental barrel because of the steep premium of prompt delivery to the second month, and are inclined to run down stocks and hold out for lower prices.”<sup>155</sup>

Another article in the same publication observed it was “no surprise” the “sharp and sudden backwardation” in the WTI market followed “two weeks of sizable crude draws in the US. In particular, crude stocks in Padd 2—the Midwest region—deflated by nearly 5 million barrels between mid-April and mid-May.”<sup>156</sup> The article concluded crude oil traders had perceived the inventory drops in the Midwest (PADD 2) as an indication of a crude oil shortage:

Traders bought the apparent Midwest tightness hook, line, and sinker, bidding up the front-month price of WTI by as much as \$3 in the second and third week of May. Crude inventories in Padd 2, some suggest, are something of a barometer for the shape of the forward price curve. Indeed, the relationship between the first- and second-month New York Mercantile Exchange contracts for light, sweet crude map very closely the magnitude by which Padd 2 crude stocks rise or fall above 65 million-67 million [barrels].<sup>157</sup>

But in fact, the article observes, there was no tightness in the supply of crude oil for the Midwest:

But is the U.S. market really short of crude? At second glance, the situation in the Midwest looks to be not so much a story of refiners without crude, as it is a story of crude without refiners. Refiners deny that there is any outright lack of availability, the prices just aren't right. . . . Meanwhile, since the run-up in the front-month [WTI] crude price, it makes more sense to rely on term-contracts and crude in storage for throughputs, than it does to buy up prompt wet barrels.

As evidence, they point to slowed crude supplies from Canada, and crude pipelines in the Midwest from the U.S. Gulf, which have ample spare capacity. In fact, crude stocks have piled up in the U.S. Gulf even faster than they drained from mid-continent tanks over the last month.<sup>158</sup>

The widely held but inaccurate perception of the actual supply and demand balance in the United States during the Midwest (PADD 2) inventory draw-down was re-enforced as refiners, in response to the sudden increase in near-term prices, drew even more heavily from their inventories of stored oil rather than make new

<sup>154</sup> Oil Market Intelligence, *Crude Oil Market Tightness: Squeezed or Perceived?*, May 21, 2002.

<sup>155</sup> *Id.*

<sup>156</sup> Oil Market Intelligence, *Feature: Perception vs. Reality*, May 21, 2002.

<sup>157</sup> *Id.*

<sup>158</sup> *Id.*

purchases. This further drawdown in stocks further increased the near-term prices in the backwardated WTI market, creating a vicious cycle of inventory draws and near-term price increases that continued until the June NYMEX WTI contract reached expiry. As Oil Market Intelligence wrote: “[E]nough market players have interpreted the stock draws as a shortage in the Midwest that they have successfully bid up prices. The result: a reinforcing cycle of backwardation.”<sup>159</sup>

Figure IV–18 shows the difference between the first and second month WTI futures contracts for the period from February through June 2002. This Figure shows the price of the near-month WTI futures contract jumped immediately after the release of the API and EIA inventory data. This spike in the near-term futures price for WTI lasted about 1 month, increasing the WTI June futures price nearly 20 percent, from \$24.75 to \$29.36 per barrel.

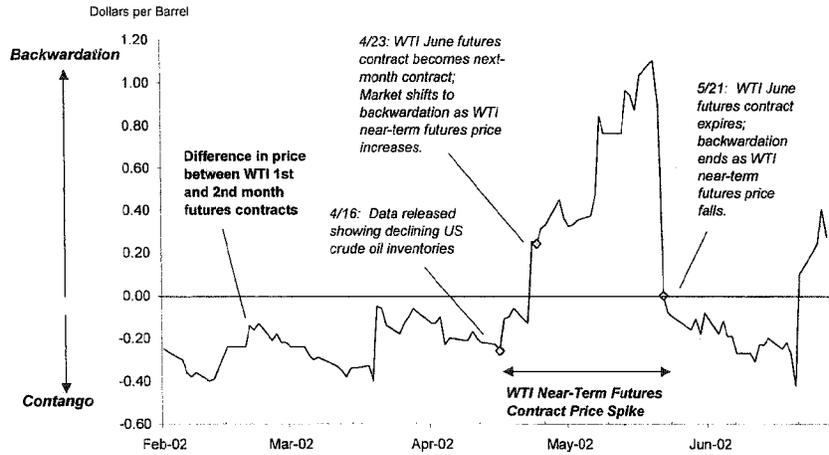
From a variety of contemporaneous reports, as well as from the price data, it appears that the spike in the WTI June contract price, which lasted from late April through late May, was caused by traders bidding up the price of the contract in light of the declining Midwestern oil inventories. In the Gulf Coast, however, there was an excess of supply over demand, as indicated by rising inventories. Given this excess of supply relative to demand, Gulf Coast prices should have fallen and excess oil should have been shipped to the Midwest. But the near-month price for WTI continued to increase, discouraging refiners from buying oil, and causing WTI prices on the NYMEX to increase even more. Because the WTI contract delivery point is in the Midwest, it was the declining Midwestern inventories, rather than the plentiful Gulf Coast inventories, which drove up the price of WTI nationwide.

This example illustrates how the supply and demand balance in the Midwest can present an isolated, disproportionate, and inaccurate reflection of national supply and demand, and yet still be the most significant factor affecting the NYMEX WTI price. If, indeed, as Dr. Mabro states, the “most important function [of prices] is to signal at every moment the state of the supply/demand balance,” over this time period the NYMEX WTI contract failed in its most important function.

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<sup>159</sup> *Id.*

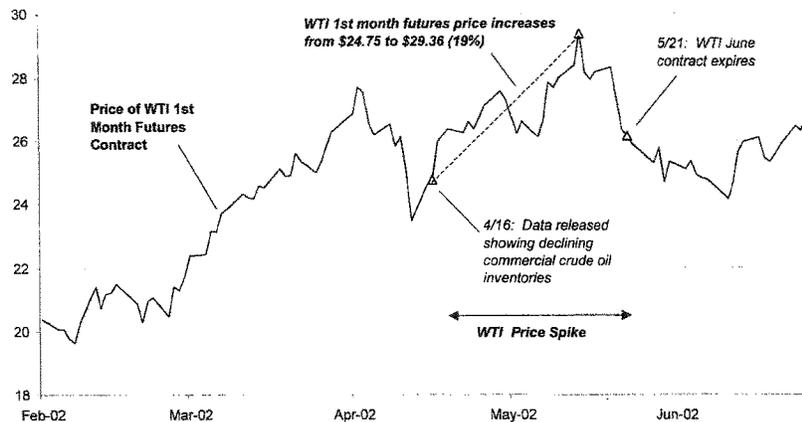
**Figure IV-18**  
**Difference Between WTI 1st and 2nd Month Futures Contracts**  
**February - June 2002**



**Fig. IV-18.** Declining U.S. inventories led to increases in WTI near-term futures prices (shifting the WTI futures market from contango to backwardation). Source of data: EIA.

Figure IV-19 shows the sharp rise in the price of the near-month WTI futures contract that began on April 16, when API and EIA data showing a decline in total U.S. and Midwestern inventories, and continued through late May, as Midwestern inventories declined from mid-April through late May (see Figure IV-16).

**Figure IV-19**  
**WTI First Month Futures Contract**  
**February - June 2002**



**Fig. IV-19.** The price of the WTI 1st month futures contract increased by nearly \$5 per barrel after the release of data showing declining U.S. commercial and Midwestern inventories. Source of data: EIA.

Figure IV-19 shows that the price of the next-month WTI futures contract rose from \$24.75 per barrel on April 16 to a peak of \$29.36 on May 14, an increase of approximately \$4.60, or 19 percent. Within days of expiry of the June contract, the WTI near-month futures contract price dropped back down to around \$25, the WTI near-month futures price before the price spike. The sudden rise in the WTI next-month price as soon as the June contract began trading and the sudden fall in the next-month price after the June contract expired indicates the June contract price was artificially inflated and did not reflect the fundamentals of global supply and demand.<sup>160</sup>

Figure IV-20 shows that the WTI spot price closely tracked the nearest-month WTI futures price during this period. As seen in this figure, the price spike in the WTI futures market in April and May spiked the prices in the crude oil spot market as well.

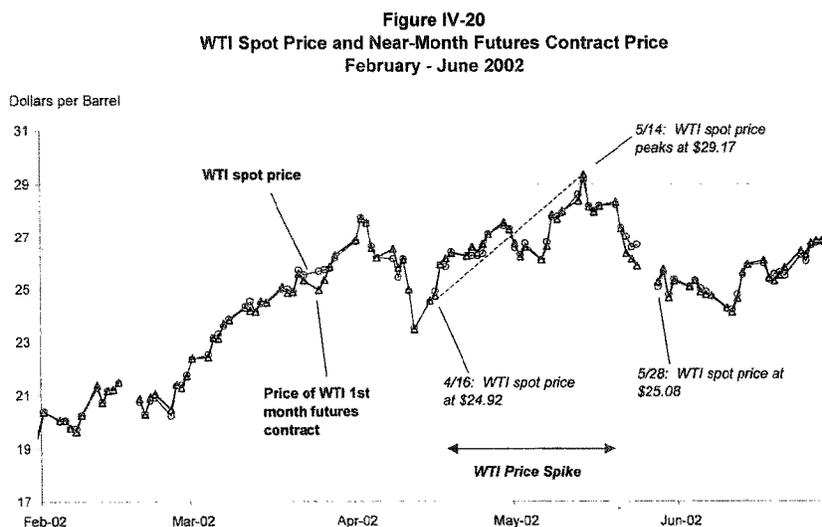


Fig. IV-20. WTI spot prices closely track WTI 1st month futures contract prices. As the 1st month futures contract price spiked in April-May, WTI spot prices spiked too. Source of price data: EIA.

An upper-bound estimate of the additional crude oil costs imposed by the April-May WTI spike can be obtained by calculating how much the WTI spot price rose during the spike compared to the WTI spot price before and after the spike. The spot price of WTI before and after this spike was about \$25 per barrel. The average price of WTI during the spike, from April 16 to May 21, was \$27.16. Hence, the spot price of WTI was, on average, \$2.16 higher during the April-May spike than before or after. Under this methodology, in just the 1-month period from April 16 to May 21, U.S.

<sup>160</sup>The price of the WTI nearest-month contract fell about \$1 per barrel per day just before expiry—from \$28.33 on May 20 to \$27.33 on May 21 to \$26.37 on May 22—and then down to \$25.27 on May 28, following the Memorial Day holiday.

consumers and businesses paid over \$1 billion in additional costs for crude oil as a result of the SPR fill.<sup>161</sup>

A more conservative, lower-bound estimate, of the added costs imposed on U.S. consumers is obtained by comparing the first and second month WTI contract prices to determine how much the first month contract rose above the baseline price during the 1-month price spike. Generally, the price of the second-month contract is viewed as a more accurate reflection of global supply and demand, since it is not subject to the type of distortions that can affect the price of a first-month contract near expiry. Thus, under this methodology, the second-month contract price is considered the “baseline” WTI price. From April 23 to May 21, the price of the first month contract exceeded the price of the second-month contract by, on average, 60 cents per barrel. Prior to and after these dates the second-month contract was higher than the first month contract by about 20 cents. Hence, the first month contract rose, on average, 80 cents relative to the second month or “baseline” price during this period. Under this methodology, in the 1-month period from April 23 to May 21, U.S. consumers and businesses paid over \$450 million in additional costs for crude oil as a result of the SPR fill.<sup>162</sup>

It is reasonable to conclude, therefore, that the WTI price spike in April and May 2002 increased crude oil costs for U.S. consumers and businesses by between \$500 million and \$1 billion. Most of these higher costs were passed on to consumers and businesses in the form of higher costs for home heating oil, diesel fuel, and jet fuel.<sup>163</sup>

## 7. WTI Price Spike Led to Price Spikes for Home Heating Oil, Jet Fuel, and Diesel Fuel

Figures IV–21, IV–22, and IV–23 show how the increases in the WTI spot price increased the price of home heating oil, jet fuel, and diesel fuel. From April 16 through May 14, the 19-percent increase in the WTI spot price spiked the spot price for home heating oil by 13 percent, jet fuel by 10 percent, and diesel fuel by 8 percent.

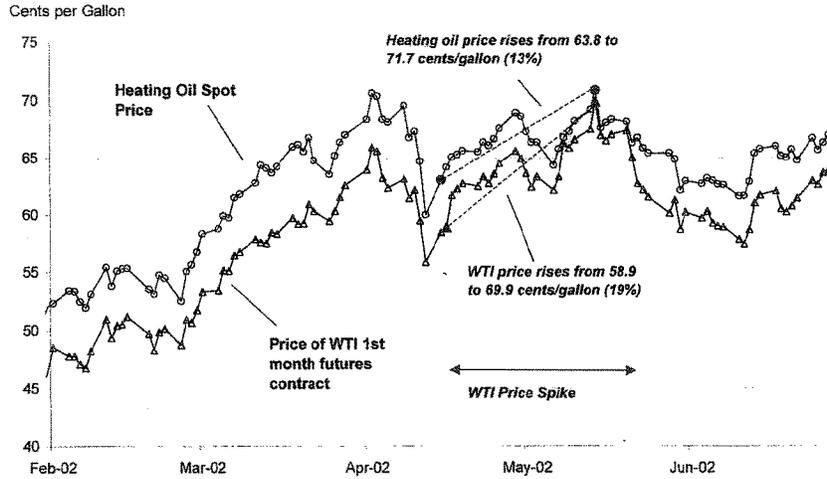
<sup>161</sup>The U.S. consumes approximately 18 million barrels of crude oil each day.  $\$2.16/\text{barrel}/\text{day} \times 30 \text{ days} \times 18 \text{ million barrels/day} = \$1.17 \text{ billion}$ . A similar upper-bound estimate of over \$1 billion in additional costs is reached if one takes the \$2 drop in the price of the near-month WTI futures contract that occurred at the expiry of the June WTI contract as the added cost attributable to the backwardation the previous month.

These estimates do not include the additional costs passed on through OTC instruments linked to the price of WTI. Nor do they include the additional costs to U.S. consumers and businesses from the increase in the cost of imports priced off Brent from November through May. This Report does not quantify these costs because of the unavailability of specific crude oil price and volume data for the affected imports.

<sup>162</sup> $\$0.80/\text{barrel}/\text{day} \times 30 \text{ days} \times 18 \text{ million barrels/day} = \$432 \text{ million}$ . Again, this calculation does not take into account additional costs arising from inflated costs for OTC instruments or costs arising from the Brent price increases.

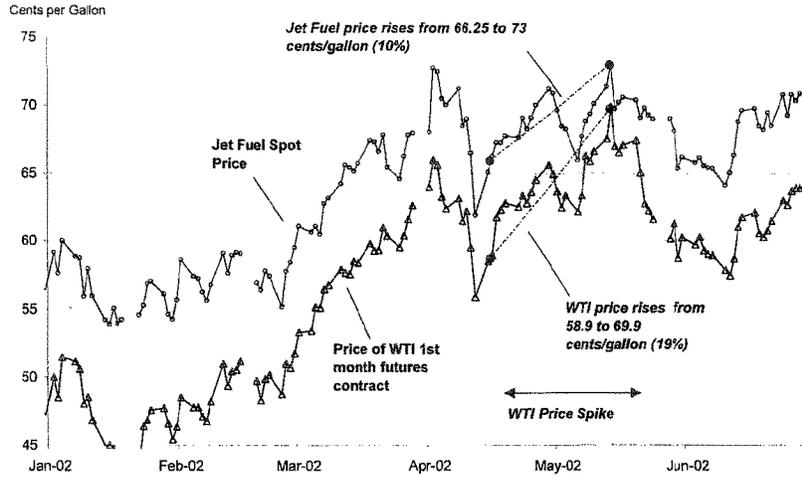
<sup>163</sup>Spot prices are, in effect, wholesale prices. As a general matter, increases in petroleum product spot prices are eventually passed on in the form of higher retail prices for consumers. See, e.g., Michael Burdette and John Zyren, EIA, *Diesel Fuel Price Pass-through*, at EIA website at <http://www.eia.doe.gov/pub/oil-gas/petroleum/feature-articles/2002/diesel.html>. Because of the decentralized nature of retail sales for petroleum products, which are sold through tens if not hundreds of thousands of retail outlets across the nation, retail sales data is much more difficult to obtain than data for the futures or spot markets. A host of additional factors affect product markets, apart from the crude oil markets, making an analysis of the specific short-term retail effects of increases in crude or wholesale prices beyond the scope of this Report.

**Figure IV-21**  
Higher WTI Prices Increase the Spot Price of Heating Oil



**Fig. IV-21.** In May 2002, higher prices for WTI crude oil increased the spot price of home heating oil by 13 percent. Source of price data: EIA.

**Figure IV-22**  
Higher WTI Prices Increase the Spot Price of Jet Fuel



**Fig. IV-22.** In May 2002, higher prices for WTI crude oil increased the spot price of jet fuel by 10 percent. Source of price data: EIA.

Figure IV-23  
Higher WTI Prices Increase the Spot Price of Diesel Fuel

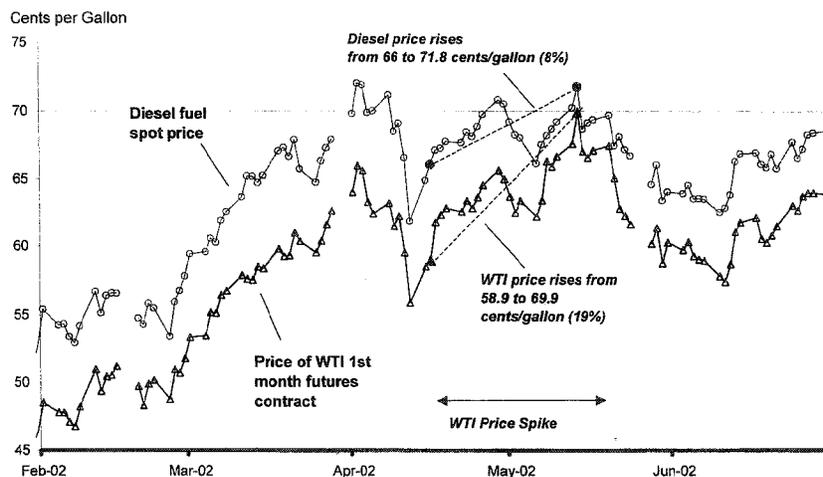


Fig. IV-23. In May 2002, higher prices for WTI crude oil increased the spot price of diesel fuel by 8 percent. Source of price data: EIA.

## 8. Higher Home Heating Oil, Jet Fuel, and Diesel Fuel Prices Hurt U.S. Consumers and Businesses

Increases in the prices of these basic commodities affect nearly every American and every sector of the economy. Home heating fuel increases, for example, affect millions of families and businesses in the Northeast and Midwest. According to the Department of Energy, 70 percent of homes in the Northeast rely on home heating oil.<sup>164</sup> In Michigan, for example, the percentage is 3.5 percent, in Minnesota, it is 8 percent, and in Maine, 4 out of 5 people, or 80 percent, heat their homes with oil.<sup>165</sup>

The hardships caused by expensive heating fuel have long been recognized. The Low Income Home Energy Assistance (LIHEAP) program assists more than 4.6 million low-income households each year. Recently, LIHEAP has provided about \$1.5 billion each year to assist U.S. households with energy costs related to extreme heat and cold. At a 2002 event announcing the release of \$200 million in LIHEAP funding for American families facing rising heating bills, U.S. Secretary of Health and Human Services Tommy Thompson noted, "Higher fuel prices pose a real hardship for many Americans. This emergency aid will give states the opportunity to help more of their citizens stay warm this winter."<sup>166</sup>

<sup>164</sup> <http://www.eia.doe.gov/emeu/plugs/plheat.html>.

<sup>165</sup> See, for example, Michigan Public Service Commission website, at <http://cis.state.mi.us/mpsc/reports/energy/02-03winter/distill.htm>; "More Minnesotans heating with natural gas," Minnesota Public Radio, December 4, 2002; "Agency predicts surge in oil prices; A study finds Mainers could pay 45 percent more this winter, depending on the chill—and the winds of war," *Portland Press Herald*, October 15, 2002.

<sup>166</sup> <http://www.ncat.org/liheap/news/Jan03/emergen.htm>.

Congress also recently established the Northeast Heating Oil Reserve (NHOR) to stabilize home heating oil prices. This reserve was established to reduce the disruptive effects associated with home heating fuel shortages and sudden price hikes, such as occurred in December 1996 and early 2000. NHOR currently holds about 2 million barrels, all of which were acquired by exchanging crude oil from the SPR for heating oil delivered to NHOR storage facilities in New Jersey, Connecticut, and Rhode Island.

Programs like LIHEAP and NHOR mean that the 13 percent jump in heating fuel futures caused by the 2002 crude oil price spikes imposed not only higher costs on U.S. consumers and businesses in the Northeast and Midwest, but also on taxpayers across the country, since these government programs are funded with taxpayer dollars.

Jet fuel is another key petroleum product that was affected by the 2002 crude oil price increases. Jet fuel is the second largest airline cost after labor, and, each month, U.S. airlines consume approximately 1.6 billion gallons of jet fuel.<sup>167</sup> In 2002, the airlines were estimated to have consumed about 18 billion gallons altogether.<sup>168</sup>

Jet fuel price increases have a major impact on the airlines' finances and ability to keep operating. David Swierenga, chief economist at the Air Transport Association, informed the Subcommittee staff that "every penny increase per gallon translates into \$180 million in added costs annually . . . which the beleaguered industry can ill afford."<sup>169</sup> Another economist has estimated that when the price of crude oil increases by 1 percent, the price of jet fuel increases by 0.74 percent.<sup>170</sup> One low-cost operator, Southwest Airlines, indicated that, "Jet fuel accounts for 15 percent of our cost structure. When we see energy prices move, it has a very dramatic effect on us."<sup>171</sup> Another airliner, Northwest Airlines, has calculated that each penny increase in jet fuel costs it an additional \$20 million annually.<sup>172</sup>

Media reports noted that, in 2000, high jet-fuel bills wreaked havoc on the airline industry, forcing bankruptcy filings of some start-up carriers, lowering earnings at major airlines, and widening losses at others.<sup>173</sup> In 2002, jet fuel prices increased 10 percent, from about 56 cents per gallon in January to about 78 cents in December. This added expense came on top of higher airline safety costs, higher debt levels, and reduced travel demand after the 9-11 tragedy in 2001. This added expense contributed to the airlines' ongoing financial woes, which have persisted even after the industry received a \$5 billion cash infusion authorized by Congress in 2001. Altogether in 2002, the major U.S. airlines suffered losses es-

<sup>167</sup> "Higher energy prices so far an irritant, but not a detriment, to U.S. economy," *Associated Press*, December 20, 2002.

<sup>168</sup> Information supplied by Air Transport Association.

<sup>169</sup> *Id.* See also testimony of Susan Donofrio, Deutsche Bank Securities, before the Senate Committee on Commerce, Science, and Transportation, October 2, 2002.

<sup>170</sup> Subcommittee interview with Gene Huang, FedEx economist, February 5, 2003.

<sup>171</sup> "Crude awakening," *San Francisco Chronicle*, April 10, 2002.

<sup>172</sup> "Rising fuel prices hit NWA," *Star Tribune*, July 6, 2001.

<sup>173</sup> See, for example, "Southwest's Fuel Hedging Yields Lower Prices, Savings," *Wall Street Journal*, January 16, 2001.

timated between \$5 and \$7 billion; increased jet fuel costs over the same period contributed to these losses.

Diesel fuel, a third key petroleum product, is also sensitive to crude oil price increases. Due to their reliability, efficiency, and safety, diesel engines play a key role in the U.S. economy, powering engines used in agriculture, construction, mining, transportation, and the military.<sup>174</sup> The Diesel Technology Forum has determined that locomotives, ships, trucks, and other forms of transportation utilizing diesel fuels move 94 percent of the nation's goods and materials, or more than 18 million tons of freight, each day. Farm equipment, which is essential to not only the 2 million operating farms in this country but also millions of consumers that buy U.S. food, generally relies on diesel fuel. Diesel fuel also powers most buses, including intercity, transit, and school buses, and a number of post office vehicles. Overall, the Diesel Technology Forum calculates that the gross output of the diesel industry in 1997, the last year for which figures are available, totaled more than \$85 billion.

The American Trucking Association estimates that for every dollar increase in crude oil prices, retail diesel fuel prices increase 2.8 cents.<sup>175</sup> An economist at FedEx, Gene Huang, estimates that when the price of crude oil increases by 1 percent, diesel prices increase by 43 percent.<sup>176</sup> Figure IV-23 demonstrates how closely diesel prices tracked crude oil prices in the first part of 2002.

Higher diesel prices hike costs in each of the sectors that rely on diesel fuel, often with attendant, negative ripple effects across the U.S. economy. One example is the trucking industry. Nearly all large trucks that transport freight in the United States run on diesel fuel, with the trucking industry consuming roughly 32 billion gallons each year.<sup>177</sup> According to the American Trucking Association, the trucking industry employs almost 10 million people, including over 3 million drivers, and accounts for nearly 5 percent of U.S. gross domestic product. Bob Costello, chief economist at the American Trucking Association, estimates that for every 10 cent increase in the price of diesel an average 1,000 motor carriers with five trucks or more in their fleet go bankrupt. According to a transportation analyst with A.G. Edwards, Donald Broughton, the large numbers of trucking company failures in 2000 and 2001 generally coincided with the rise in diesel prices.

In addition to trucking business failures, trucking disruptions can impose an immediate, widespread drag on the U.S. economy by delaying shipment of goods and materials. "There is more dependence on just-in-time deliveries," Mark Whitenton of the National Association of Manufacturers said. "Even a couple of days disruption could cause factories to close."<sup>178</sup> In 2000, for example, a price spike in diesel fuel stalled truckers in parts of New England. "Diesel fuel cost between \$2.50 and \$2.60 a gallon, and trucks would not even go into Maine because there was not enough freight to

<sup>174</sup> See "Diesel Technology and the American Economy," a report prepared for the Diesel Technology Forum, October 2000.

<sup>175</sup> Subcommittee interview with Diego Saltes, economist at the American Trucking Association, February 3, 2003.

<sup>176</sup> Subcommittee interview with Gene Huang, FedEx economist, February 5, 2003.

<sup>177</sup> Information provided to Subcommittee staff.

<sup>178</sup> "Fuel price escalation already spills into cost of other goods," *Chicago Tribune*, January 26, 2003.

pick up on the return trip to offset the cost,” said Todd Spencer of the Owner-Operator Independent Drivers Association.<sup>179</sup> After Iraq invaded Kuwait in 1990, and crude oil prices nearly doubled to \$41 per barrel, one long-haul trucker, Lee Klass, stopped driving.<sup>180</sup> “The price of diesel fuel jumped 40 cents a gallon,” Klass recounted. Rather than pay the price at the pump, he parked his truck. “It reaches a point that unless rates are doubled it doesn’t make sense to haul any freight.”

Home heating oil, jet fuel, and diesel fuel prices spiked in the spring of 2002 as a result of the increase in the price of crude oil. Since that time, the prices of these petroleum products have continued to climb along with crude oil prices. They have been joined by increases in gasoline prices. Since these and other costs took place after the period examined in this case study, they are discussed in the next section of this Report. Their attendant negative effects on the U.S. economy have continued to hurt U.S. consumers and businesses.

In light of the economic harm to U.S. consumers and business from higher prices for home heating fuel, jet fuel, and diesel fuel, as well as other costs associated with high-priced crude oil, it is critical that DOE recognize these costs and take steps to minimize the costs associated with depositing oil into the SPR.

### **9. High Crude Oil Prices Increased Refinery Costs**

Higher crude oil prices in early 2002 also increased refinery costs. A refiner’s income is determined by how much it can sell its product for on the wholesale market, and its expenses are determined by how much it has to pay for crude oil and how much it costs to operate the refinery. If it can sell its products for more than it costs to purchase the crude oil plus its expenses, then it will make a profit; if not, it will lose money. The difference between the price a refiner can obtain for a refined product, such as gasoline, and the price of crude oil is called the “refining margin,” and to a large extent determines the profitability of the refinery.

In spring 2002, U.S. refiners saw their crude oil costs increase significantly, but were unable to raise gasoline prices due to the high level of gasoline supplies resulting from a flood of gasoline exports from Europe. Because the plentiful supplies of excess European gasoline capped potential increases in the retail price of gasoline, more direct consumer harm from the crude oil price increases was avoided. Instead, U.S. refiners absorbed these additional costs.

Because U.S. refiners could not pass along the increased costs of crude oil to the gasoline market, refining margins fell significantly in April and May. The overall margin for a refinery (termed the “crack spread”) is determined by taking into account the refining margins for several of the key products of a typical refinery. Figure IV–24 shows the negative effect the April–May WTI price spike had on the “3–2–1 crack spread.” The 3–2–1 crack spread is calculated by assuming that three barrels of crude oil are refined into two barrels of gasoline and one barrel of heating oil. As Figure IV–24 demonstrates, refining margins, as measured by the 3–2–1 crack

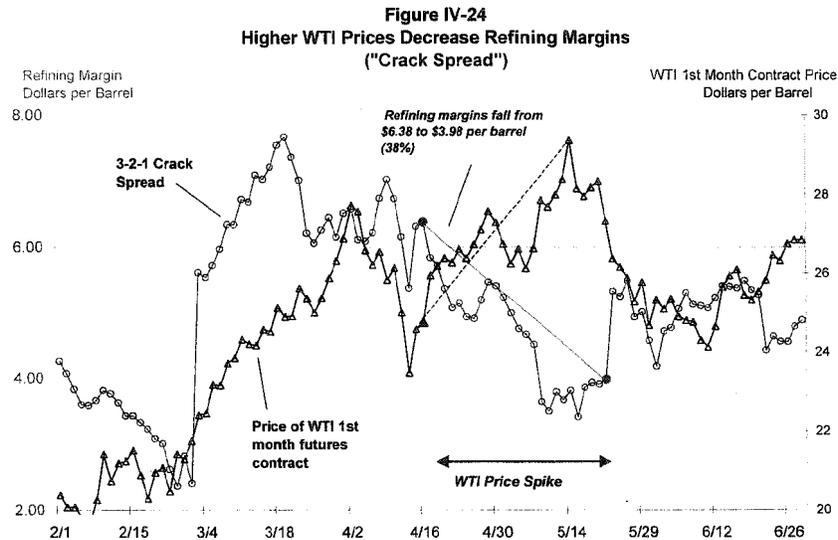
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<sup>179</sup> *Id.*

<sup>180</sup> *Id.*

spread, fell from \$6.38 per barrel on April 16, when the EIA and API inventory data was released, to \$3.98 per barrel on May 21, when the WTI June contract reached expiry.

The near-40 percent fall in the crack spread resulting from the WTI price spike dropped this measure of refinery profitability to one of the lowest levels in the past several years.



**Fig. IV-24.** From late April through late May 2002, overall refining margins fell as the WTI price spiked. Source of price data: EIA.

These lower refining margins were one of the major reasons for the dismal financial performance of oil companies in the second quarter of 2002.<sup>181</sup> Table IV-1 presents the reported earnings of major oil companies for the second quarter of 2002, a very poor quarter for refiners, as compared to the second quarter of 2001, a very good quarter for refiners.

<sup>181</sup> The narrowing of the heavy-light and sweet-sour differentials led to major losses for U.S. refiners that rely on heavy and sour crudes. Although OPEC production cuts are often attributed to be the reason for the narrowing of this differential in the first half of 2002, the decrease in Atlantic basin sweet crude imports due to high Brent prices led U.S. refiners to use relatively more heavy sour crudes. This shift in the relative percentages of heavy and light imports also contributed to the narrowing of the heavy-light differential in the second quarter of 2002.

**Table IV-1**  
**Oil Company Second Quarter Earnings**

<u>Company</u>	<u>Earnings Per Share</u>	<u>Change from 2Q 2001</u>
Exxon/Mobil	\$0.39	-39.0%
Royal Dutch/Shell	n.a.	-37.7%
BP	\$0.59	-51.2%
Chevron Texaco	\$1.16	-42.5%
Phillips*	\$0.95	-38.7%
Conoco	\$0.22	-76.7%
Marathon	\$0.62	-67.5%
Valero*	\$0.10	-95.9%
Sunoco	\$0.35	-86.8%
Occidental	\$1.25	-1.5%
Amerada Hess	\$1.91	-52.1%
Ashland	\$0.93	-67%
Tesoro*	(\$0.28)	-160.7%
Unocal	\$0.55	-41.2%
Murphy	\$0.30	-85.3%

\*Indicates 2001 figures do not include subsequent acquisitions that increased the company size substantially.

Source: *Petroleum Finance Week* (August 19, 2002)

Different refiners were affected differently, based upon the slate of crude oils normally purchased for the different refineries. East Coast refiners relying on the transatlantic trade in sweet crudes priced off Brent were hit hardest:

Average U.S. gross refining margins dropped more than \$1 barrel to \$2.50 a barrel during the week ended May 11, marking the fourth consecutive weekly decline due to high crude oil prices and relatively moderate prices for gasoline and distillates, according to Salomon Smith Barney's weekly margin report. . . . The weakest margins are on the East Coast for Brent-based production at \$1.40 a barrel, while the highest are in the Midwest at \$4.40 a barrel.<sup>182</sup>

<sup>182</sup> Reuters, *US Refining Margins in Red in Most Regions—Report*, May 14, 2002.

The high costs of Brent were cited as reasons for production cuts at the Valero and Phillips refineries in New Jersey.<sup>183</sup>

The negative effects of the SPR program on refinery performance is of concern because low refining margins threatening the financial viability of many U.S. refiners. Low and volatile refining margins have been one of the main factors underlying the large degree of consolidation in refinery ownership that has occurred in recent years. In a number of areas of the country the refining industry has become highly concentrated, exacerbating the volatility of gasoline prices, harming consumers and the national economy.<sup>184</sup> To the extent that governmental action imposes additional costs upon this industrial sector with no attendant benefits, further investment in this sector is discouraged, energy security is diminished, and consumers are harmed.

Perhaps most significantly, in recent years refiners have been reducing inventories as a way to reduce costs. Governmental actions and policies that increase the costs for refining crude oil, without any commensurate benefits, will lead refiners to reduce inventories even further.<sup>185</sup> This will lead to more price volatility and higher consumer prices.

### C. Oil Company Decisions to Send So Much Brent to the SPR

Although DOE provides SPR contractors with the option to place a variety of sweet crude oils into the SPR, from the fourth quarter of 2001 through the second quarter of 2002, nearly 90 percent of the sweet crude oil deposited into the SPR was Brent crude oil. The placement of so much Brent crude oil into the SPR, as well as the shipment of so much Brent to China, halved the normal Brent-WTI differential for most of this period and squeezed the Brent market twice, once in January, and once around April. The Arcadia squeeze of 2000 had demonstrated the price increases that would follow of a squeeze in the Brent market, so traders acquiring large amounts of Brent in 2002 would have known that acquiring large amounts of Brent would significantly increase prices.

One of the issues examined by this investigation is whether traders may have acquired large amounts of Brent in early 2002 to create these foreseeable impacts and profit from them, or whether the decision to acquire large amounts of Brent was motivated by other commercial interests.<sup>186</sup> Because of the complexity of the analysis

<sup>183</sup> *Id.* In mid-May, Valero announced it would cut back on refinery production by 23 percent—or by 360,000 barrels per day—as a result of “high product inventory levels and uneconomical operating conditions.” *The Oil Daily, Refiners Put Brakes On As Car Season Nears*, May 17, 2002; Oil Market Intelligence, *Americas: Where’s the Upside?*, May 21, 2002. “The very low margin between the selling price of gasoline and the purchase price of crude oil is the reason for the run cuts,” Valero officials stated Dow Jones, *Valero Cuts Runs at Non-West Coast Refineries by 20%*, May 16, 2002.

<sup>184</sup> The Subcommittee’s Report, *Gasoline Prices: How Are They Really Set?* on page 322 of the PSI hearings held Apr. 30 and May 2, 2002, S. Hrg. 107–509, addressed these issues.

<sup>185</sup> For example, independent refiner Valero, which was one of the companies most affected by the increase in crude oil prices and the narrowing of the heavy/light differential in early 2002, and facing a downgrade by Moody’s credit-rating agency, recently announced that it had cut its stocks from a high of 69 million barrels in 2002 to 54 million barrels. Philip K. Verleger, Jr., *Notes at the Margin*, February 3, 2003.

<sup>186</sup> Even if trading activity is undertaken pursuant to a legitimate commercial purpose, however, a trader’s activity still may amount to abuse under U.K. law or manipulation under U.S. law if the trader exacerbates a “natural” squeeze that has arisen. The CFTC has warned that

Continued

required, and the unavailability of information about OTC trading activity, the Subcommittee Minority staff was unable to reach a conclusion on this matter.

The following discussion presents the explanations provided by oil companies interviewed by the Minority Staff as to why they acquired large amounts of Brent in late 2001 and early 2002. Because of the voluminous and complex records underlying these transactions, the Staff did not examine company documents.

In essence, traders with companies that purchased large amounts of Brent in early 2002 told the Subcommittee staff that their purchases of futures contracts for Brent were undertaken solely for hedging purposes, were limited to the amount of contracts necessary to accomplish this purpose, and were not undertaken for the speculative purpose of profiting from rises in the price of Brent. Similarly, these officials stated that their use of the 15-day Brent OTC market was for the purposes of hedging and acquiring Brent cargoes.

Sempra Energy Trading Company officials told the Subcommittee staff that in November 2001, Chinese refiners placed large orders for Atlantic Basin sweet crude oil because the Brent-Dubai differential had narrowed, making it more economic to purchase Brent and other Brent-based grades than sour Middle Eastern grades. Sempra officials stated they used the futures market to hedge the purchase price of the cargoes it was acquiring, and did not make trades to exacerbate the squeeze.

Shell officials told the Subcommittee staff that in late January and early February it received a large number of inquiries and orders for light sweet crude oil. Shell believed these orders were placed by oil companies seeking light sweet crude oil to meet the DOE's SPR fill requirements, and from other traders who had postponed their purchases of North Sea crudes until the market had returned to contango following the backwardation arising from the purchase of Brent for buyers in Asia. Shell stated that its public statement on February 11 that it had potential orders for all of the Brent crude loading in March evidences its intent to avoid an exacerbation of the market congestion, which, Shell admitted, was partially done for purposes of self-interest, as it was acquiring cargoes during this period. Shell claimed that its announcement, despite causing a 1-day price spike in the market, helped prevent the type of squeezes that occurred in January and April 2002.

BP stated that its schedule for delivering crude oil into the SPR was set by the DOE pursuant to the requirements of the exchange program under which BP had previously acquired crude oil from the SPR, and to meet this schedule it was necessary to acquire large amounts of Brent crude for loading in April and May 2002. BP pointed to the fact that in early April it requested the DOE to permit a deferral of its obligations in light of the high price of Brent that prevailed at the time as evidence that it sought to relieve rather than exacerbate the market congestion resulting from the large demands placed on the Brent market from the SPR program.

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traders who continue to purchase "long" contracts during a squeeze may be found to have violated the prohibition against manipulation. See Appendix 1.

All of the traders interviewed by the Subcommittee staff stated that Brent was the light sweet crude that was easiest and most economical to obtain. Some traders stated Brent was preferable even at a small premium in price to other acceptable sweet crudes because the price of Brent could be hedged more precisely and because of the ease of obtaining large amounts of Brent, both directly from the loading terminal at Sullom Voe and through trades with other companies.

Officials from the London IPE stated in interviews with the Subcommittee staff that their review of IPE trading activity in early 2002, which included a review of trading positions and discussions with all of the parties involved in significant trades of Brent, did not detect any violations of exchange rules by any traders within its jurisdiction. Officials with the U.K. FSA attributed the unusual movements in the price of Brent to the dwindling supply of Brent, and did not conclude there was any market abuse under U.K. law. But IPE officials also noted that their review of the Brent market encompassed only trading activity within the IPE's market, and did not extend to other markets, such as trading on the OTC markets.

The Subcommittee's review did not include a review of OTC activity, since data on OTC trading activity is not available. Without information about the OTC positions held by traders, such as the amount and types of contracts purchased or sold, the price paid, and the dates of the transactions, it is impossible to arrive at any conclusion regarding whether or not the OTC markets were used to exploit the squeezes in the physical and commodity markets, or whether positions were taken in the OTC markets that would constitute manipulation or abuse if undertaken on the futures markets.



## V. THE 2002 SPR FILL PROGRAM

*“If you decide to have a simple rule for acquiring SPR oil, the worst one you could possibly pick would be filling at a constant rate of speed.”*

*—Internal DOE Analysis of SPR Program*

*“As to the questions that relate to the deferring of the filling of the Reserve because of issues that relate to price, we believe it’s in our interest at this point to continue moving ahead at the pace we’re moving to continue filling the Reserve, and not to defer that because of price fluctuations.”*

*—U.S. Secretary of Energy, April 9, 2002*

In November 2001, the President directed the Secretary of Energy to fill the SPR to its 700 million barrel capacity “in a deliberate and cost-effective manner.” Existing DOE market-based practices were to acquire crude oil for the SPR while oil prices were relatively low and less oil when prices were relatively high. Pursuant to this market-based policy, DOE had routinely allowed oil companies to defer scheduled shipments to the SPR when prices were high in return for additional barrels of crude oil deposited into the SPR at a later time. This approach had allowed DOE to avoid disrupting the crude oil markets and the economy while filling the SPR.

In February 2002, DOE decided to stop allowing SPR deferrals. Under the new policy, oil was to be put into the SPR at a constant rate, regardless of the price of oil. Documents provided to the Subcommittee by DOE indicate the decision to overturn the SPR program’s market-based fill procedures was made by the Secretary of Energy after consulting with other high-ranking Administration and White House officials.

DOE documents show SPR career officials opposed discarding the market-based procedures they had been using to fill the SPR and then pushed for a return to those procedures. SPR officials accurately warned about the negative consequences of the no-deferral policy, including higher prices for crude oil, a dampening of economic growth, and foregone savings of hundreds of millions of taxpayer dollars. SPR career officials also accurately projected that filling the SPR without regard to global supplies or crude oil prices would reduce U.S. private sector inventories of crude oil, thereby undercutting the fundamental purpose of the SPR program—to ensure this nation has adequate supplies of crude oil in the event of a major disruption in oil supplies.

### **A. DOE Changed SPR Policy to Require SPR Fills Regardless of Oil Prices**

In February 2002, BP, an oil company, asked DOE for permission to defer delivery of 9 million barrels of Brent crude oil that BP was

contractually required to deliver to the SPR in May, June, and July 2002. At the time of BP's request, SPR Business Procedures allowed deferrals of scheduled deposits into the SPR provided the company seeking the deferral compensated the government for the delay by depositing additional amounts of oil into the SPR at a later time.<sup>187</sup> SPR policies allowed the SPR Office to "let the markets determine [its] buying pattern" and to use its crude oil acquisition strategy "to stabilize markets."<sup>188</sup>

As explained in Section IV, in early 2002 Brent crude oil was in scarce supply due to large numbers of shipments of Brent to China and the SPR. As a result of the increased demand for Brent, Brent prices had increased in the spot and futures markets, and the difference in price between Brent and WTI had narrowed to about 75 cents, a level at which it generally is uneconomic to ship crude oil across the Atlantic. According to BP officials, BP was concerned that taking additional large quantities of Brent out of the marketplace at that time would further strain Brent supplies and increase prices, and so requested DOE to defer delivery of the 9 million barrels of Brent BP was required to deposit in the SPR. DOE denied the request.

On March 18, 2002, as the near-month price of Brent climbed to \$25 a barrel and near-term prices on the Brent futures market exceeded future prices (shifting the market into backwardation), BP renewed its request for a deferral. In an e-mail to a DOE SPR official, Exhibit V-1, a BP official offered to deliver an additional 500,000 barrels if DOE would allow a 1-year deferral. In the e-mail, the BP official stated the deferral would "ease] logistical issues," and wondered "whether the politicians might be keen given the rise in prices that we are currently seeing."

In reviewing the BP offer, another SPR official wrote in an internal e-mail dated March 20, Exhibit V-1, "See no change in the no deferral policy unless the price of oil increases. Recommend saying thank you, but not at the present time." On March 20, William C. ("Hoot") Gibson, the DOE Project Manager at the SPR site in Louisiana, responded to BP by e-mail, stating that DOE wanted to proceed with filling the SPR, and that BP should deliver according to the terms of the contract.<sup>189</sup>

The next day, March 21, 2002, a DOE official, in an internal e-mail sent to other SPR officials, Exhibit V-2, wrote that John Shages, Director of the Finance and Policy Office in the SPR program, planned to discuss the no-deferral policy with the staff of the National Security Council, so the issue should not be considered "totally closed." According to this e-mail:

Deferrals in general were discussed in our PR [Petroleum Reserves] staff meeting this morning, with Hoot in attendance. John Shages said he wanted to discuss with the National Security Council to make sure he understood what the White House's reaction would be if prices were to go up to the politically sensitive level of \$30/bbl or so.

<sup>187</sup> See Section II and Appendix 3, Exhibit II-1, for a copy of the published procedures.

<sup>188</sup> See Section II and Appendix 3, Exhibit II-2.

<sup>189</sup> This e-mail was described in a telephone conversation between DOE and Subcommittee staff on November 20, 2002, but DOE has not provided the Subcommittee with a copy.

I think the issue is not totally closed and will be discussed further by management.

On April 1, following an increase in the near-month Brent price to nearly \$27 per barrel, BP again asked DOE to allow a deferral, and upped its offer by another 250,000 barrels. “I know that you said last week that the government would have no interest in deferring the exchange barrels,” the BP official wrote in Exhibit V-3, “but the oil price does keep rising. As of this morning we calculate a years deferral would be worth an extra 750,000 [barrels] to you. I’m not trying to bug you on this, but just wanted to make sure you knew of the opportunity.”

DOE officials told the Subcommittee staff that “issue papers” discussing BP’s deferral request were provided to the Secretary of Energy as well as to National Security Council (NSC) and National Economic Council (NEC) officials at the White House. These DOE officials also told the Subcommittee staff it was their belief—although they did not have actual knowledge of the decision process—that the decision to adopt a no-deferral policy was then made by the Secretary of Energy in consultation with other high-ranking White House and Administration officials.<sup>190</sup>

The no-deferral policy was publicly announced by the Secretary of Energy at a press briefing on April 9, 2002. This press briefing took place a few hours after a meeting of several Cabinet members, including the Secretary of Energy, at the White House.<sup>191</sup> A reporter asked the Secretary, “In light of Venezuela and Iraq, how serious are you about using the Strategic Petroleum Reserve or, maybe to a lesser extent, deferring royalty oil?” The Secretary responded:

Well, in terms of a decision to tap the Strategic Petroleum Reserve, I think the President has made it very clear that that happens if there’s a belief that it’s in the national security interests of this country. We’re not at the point of making a—even looking at those options at this point. It’s obviously, however, a tool available to the President should he conclude national security interests are involved.

As to the questions that relate to the deferring of the filling of the Reserve because of issues that relate to price, we believe it’s in our interest at this point to continue moving ahead at the pace we’re moving to continue filling the Reserve, and not to defer that because of price fluctuations.<sup>192</sup>

After the Secretary’s public statement on the deferral policy, a senior SPR career official prepared an internal SPR document enti-

<sup>190</sup> Telephone conversations with Subcommittee staff, November 7, 15, and 20, 2002. In a letter dated December 9, 2002, the Subcommittee asked DOE to provide all documents generated after November 2001, related to deferrals of SPR deliveries. On January 10, 2003, DOE provided several hundred pages of responsive documents to the Subcommittee, but also stated, “Certain additional documents still are under review.” DOE staff subsequently told Subcommittee staff no responsive documents containing communications between DOE and the Executive Office of the President would be provided. DOE has yet to provide the Subcommittee with copies of documents indicating they were prepared for the Energy Secretary, NSC, or NEC officials related to the SPR deferral issue.

<sup>191</sup> Telephone conversations with Subcommittee staff, November 7, 15, and 20, 2002.

<sup>192</sup> Federal News Service, April 9, 2002.

tled, “Options for Filling the SPR,” Exhibit V-4, which describes the change in the SPR fill policy. This document notes that the no-deferral decision was made “after conferring with the White House” and that the “reasoning” was “not made public.” The author observes, however, that “the most plausible explanation” is to fill the SPR as fast as possible “for national security or energy security reasons.” One passage states:

Prior to the events of September 11, 2001, the SPR Office routinely renegotiated delivery dates. The business model of trading more delivery time for increased volumes of oil was characterized by reduced costs, conformance with normal private sector practices, logistical flexibility to accommodate busy terminals or maintenance requirements at the sites, and acceptance by all of the companies with contracts. In February 2002, the SPR Office received a request to defer deliveries of 9 million barrels of oil for a year. The initial offer of extra oil in consideration of the deferral was valued at \$18 million. In order to stay in conformance with the President’s highest priorities, the SPR Office asked the Administration for guidance prior to negotiating for this deferral, and the Secretary after conferring with the White House announced we were planning to take oil deliveries on schedule without deferrals. The reasoning for turning away from a successful business model was not made public, however, the most plausible explanation is a desire to have as much oil in the SPR as fast as possible for national security or energy security reasons.

Two internal DOE e-mails, Exhibits V-5 and V-6, provide more evidence that SPR deferral issues were discussed by senior Administration officials to resolve conflicting views on whether to postpone SPR oil shipments when crude oil prices were high. These e-mails indicate that the Department of Interior (DOI), which oversees the exchange of royalty oil from federally-owned offshore leases for crude oil to be deposited into the SPR, wanted to stop transferring oil to the SPR program “when a certain trigger price for oil is reached” such as \$30 per barrel.<sup>193</sup> According to these e-mails, the DOI and DOE positions differed on whether transfers of oil to the SPR should stop when the trigger price was reached, and the issue was to be resolved by the Deputy Secretary of Interior and the Deputy Secretary of Energy, “and then reviewed by the White House.”

Exhibit V-5, an e-mail dated November 15, 2001, from John Shages, of the SPR Office, to Deputy Secretary of Energy Francis Blake, states:

Frank: We held a meeting today with the Minerals Management Service hierarchy today. They allowed [Deputy Secretary of Interior] Steve Griles gave them clear instructions that if oil prices spike, and it becomes desirable to stop filling the SPR, the MMS should stop the transfer of

<sup>193</sup> See Section II.C.2 for a description of the role of the DOI in filling the SPR program. As explained in this section, the higher the price at which royalty oil is used for the SPR program, the greater the loss to the Treasury from royalty revenues, and hence the greater the total program cost to the taxpayer.

royalty oil to DOE. We made the case for continuing the transfer and allowing DOE to manage the delivery schedule to eliminate the unwanted demand. They immediately said the issue would have to be resolved by you and Steve Griles, and then reviewed by the White House. They proposed writing an issue paper for you and Steve Griles, and then reviewed by the White House. They proposed writing an issue paper for you and Steve Griles, and we have agreed to do that jointly with them. While we believe the pros and cons of this issue are obvious, MMS feels they need some time to prepare their position and asked for November 28 as a date to have the paper ready for delivery to you, and we also agreed to that.

Although both e-mails indicate a joint DOI-DOE issue paper was being prepared to help resolve this interagency dispute, DOE informed the Subcommittee staff that the dispute was resolved in DOE's favor after oral discussions and no such document was ever prepared.

Together, these internal DOE documents indicate that DOE's decision to deny BP deferral requests were made after the Secretary of Energy consulted with other senior Administration and White House officials. DOE has declined to provide the Subcommittee, however, any documents prepared by SPR or other DOE staff for the Secretary of Energy, other top DOE officials, DOI, NSC, NEC, or other officials in the White House related to the deferral decision. DOE officials have also provided limited and, at times, inconsistent information on the process by which the Energy Secretary made the decision to deny the BP deferral requests and, more generally, to overturn the SPR Office's market-based deferral policy in favor of an inflexible rule against deferrals.

#### **B. SPR Career Officials Opposed Policy Change and Warned DOE the New Policy Would Increase Oil Prices, Consumer and Taxpayer Costs**

In response to the Subcommittee's request for documents related to the change in SPR deferral policy, several issue papers were provided from the files of SPR officials. These documents provide candid assessments by SPR career officials of the new no-deferral policy and record their repeated attempts to return to a market-based deferral policy.

Exhibit V-7 is an internal SPR memorandum analyzing possible fill rates for the SPR. It notes that DOE has "the option of entertaining offers to delay [SPR] deliveries in return for bonus barrels of oil which could relieve the speculative oil market," as well as options to further accelerate the fill rate. The undated memorandum appears to have been written for higher-ranking Administration officials evaluating BP's April 1 request for a deferral, since it states, "DOE has received an offer to pay an additional 750,000 barrels of oil in exchange for rescheduling 9 million barrels to one year later," and discusses the pros and cons of accepting the offer.

The document summarizes the previous deferral policy of the SPR Office as follows: "During 2000 and 2001, whenever these conditions arose, the SPR Office agreed to later delivery dates in exchange for more oil. Renegotiation of delivery dates, if proposed by

contractors, in exchange for more oil is the standard business practice for SPR oil acquisition.” The document notes that deferrals during these years enabled DOE to acquire 7 million barrels of additional SPR oil at no cost, thereby saving the Treasury \$175 million.<sup>194</sup>

The document provides an overview of the economic, energy security, budgetary, foreign relations, and market consequences of accelerating or deferring shipments to the SPR. The document summarizes the pros and cons of deferrals as follows:

**Option 1: Do not entertain offers to renegotiate delivery dates**

*Pros*

- Sends no signals to producing countries or allies
- Fills the SPR at an even rate between now and 2005
- Does not raise any speculation that the Administration is willing to meddle in the market

*Cons*

- Deviates from the normal SPR business practice
- SPR fill would continue even if markets become distressed or highly speculative

**Option 2: Renegotiate delivery dates**

*Pros*

- Reduces the program cost to Treasury, with a potential in the hundreds of millions of dollars
- Acts automatically to counteract market volatility by increasing demand when prices are relatively low and reducing demand when prices are relatively high
- Acts to mitigate an unwelcome price rise while the world’s economies are only beginning to recover from recession
- Could be viewed favorably by consumers

*Cons*

- Delays the addition of oil to the SPR, with energy security implications
- May appear to be a market intervention or an attempt to challenge OPEC in controlling market inventories and prices
- Could be viewed as an accommodation to “big oil”

The memorandum favors granting deferrals, identifying as potential benefits, among others, the saving of hundreds of millions of dollars for the Federal Government and lowering “unwelcome” crude oil price increases to benefit consumers and national economies.

A second document, Exhibit V-4, described earlier, was prepared after the Secretary of Energy’s announcement on April 9, 2002, of the new no-deferral policy. This document describes how the policy to allow deferrals was overturned by the Secretary after conferring with the White House, warns of the adverse consequences of a no-deferral policy, and proposes a return to the previous policy allowing market-based deferrals, which the paper calls “a successful business model.”

<sup>194</sup>See Section II.

According to this document, one of the prime reasons provided to the SPR Office for not granting deferrals was “the concern that the Government should not manipulate the market.” Countering this assertion, the paper explains in detail how “its normal business practice does not manipulate the market, but instead conforms with the goal [that] the acquisition should minimize impact on market forces.” Indeed, the paper notes, “The simple rule of taking SPR oil as it is contractually due exaggerates [price swings caused by OPEC production], since the SPR takes the same volume regardless of price. It is a business model different from all private market participants, and if followed by a significant number of market participants would lead to explosive prices swings.”

The paper advocates a return to acting in “a rational business-like manner”:

The SPR Office proposes a return to the SPR oil acquisition business model, allowing deferrals which will always be counter-cyclical to OPEC induced price volatility. Since there would be consistency in our behavior, markets would not be surprised, and contractors would be comfortable knowing that the Government was acting in a rational business-like manner. Acquiring less oil in high price markets and more oil in low price markets is . . . ordinary behavior, [and] it would have much less impact on market forces than does the practice of ignoring price and acquiring just as much oil at high prices as at low prices.

The document also identifies a number of benefits from allowing deferrals when market prices are high. The document notes, “it would be good public policy if oil acquisition were to take [place] during robust growth and deferred when the economy is in a cyclical downturn.” Identified benefits include reduced costs of oil imports, an improved balance of trade, and reduced costs for the SPR program.<sup>195</sup>

Another document, Exhibit V–8, is entitled “Renegotiation of Delivery Dates for Strategic Petroleum Reserve Oil” and contains a handwritten notation “5/2/2002” in the upper-right hand corner. It is a one-page document that, again, advocates “allow[ing] the [SPR] Office to resume negotiations of delivery dates for oil that is contracted for delivery on certain future dates.” According to this document, the advantages to allowing renegotiation of delivery dates are that it is “very business like”; it “increases the inventory of the Reserve without fiscal expense”; the practice “testifies to serious management by bringing down the average cost of oil in the Reserve”; and it is “good public policy” because deliveries “can be successively renegotiated until [private sector] inventories are normal, near-term prices are low and the economy is growing strongly.” The author observes, “Insisting on deliveries to the SPR during [a] tight market would be heavily criticized as mismanagement and would be difficult to defend.”

Exhibit V–9 is a June 5, 2002, memorandum from John Shages, a senior SPR official, to Paul Leiby of the Oak Ridge National Lab-

<sup>195</sup>The final page of this document describing the benefits of the SPR’s prior deferral policy ends in mid-sentence, one-third of the way down the page. Despite repeated requests, DOE has yet to explain the missing or redacted information.

oratory (ORNL),<sup>196</sup> in response to an earlier memorandum sent by Mr. Leiby in May 2002, Exhibit V-10, on designing a study of the economic impacts of filling the SPR. In his memorandum, Mr. Shages argues that a policy of allowing deferrals of deliveries into the SPR based on market conditions can provide a variety of significant benefits, including lower overall market prices for crude oil, an improvement in the balance of trade by \$250 million per month, and greater amounts of crude oil available for private sector inventories.

In one passage, the document states the new no-deferral policy “appears irrational to the market place.” The document observes that this new policy—which is termed the “*status quo*”—may have facilitated the squeeze in the Brent market in April 2002:

For 2 years, any contractor could look at the backwardation in the futures market, and make us an offer for deferral. We ran our own valuation of the delay, set a negotiating target for ourselves for a share of the money on the table, and if we hit our target we agreed to the deferral. Every contractor deferred deliveries; they understood the process, it mimicked what they do in the private sector, and no surprises. The *status quo* is what appears irrational to the market place. It leaves the contractor vulnerable to things such as a short squeeze in the Brent market, and in fact there have been some attempts to blame a recent squeeze in the dated Brent market on us for demanding delivery regardless of market circumstances. Also, remember Howard Borgstrom’s thesis. It can be boiled down to, “If you decide to have a simple rule for acquiring SPR oil, the worst one you could possibly pick would be filling at a constant rate of speed.”

In another passage, the document describes the no-deferral policy as “a fill model that was discredited years ago.”

Together, these DOE documents demonstrate that SPR career officials were aware of and warned against the negative consequences of a strict no-deferral policy, from encouraging “explosive price swings,” to increasing taxpayer and consumer costs, to increasing the market’s vulnerability to squeezes. The documents also demonstrate SPR officials advocated returning to a flexible deferral policy based on market conditions and overall national energy security.

### **C. SPR Career Officials Warned DOE the New Policy Would Reduce U.S. Crude Oil Commercial Inventories**

Exhibit V-4, the internal SPR memorandum prepared by a career SPR official, also accurately warned DOE that filling the SPR during a tight market would reduce U.S. private sector crude oil inventories.

This prediction is based on fundamental market principles of supply and demand. In a tight market—when immediate demand is high relative to supply—every barrel of oil that goes into the gov-

<sup>196</sup>Mr. Leiby is the principal author of a report prepared for the SPR Office in November 2000, entitled “The Value of Expanding the U.S. Strategic Petroleum Reserve,” and has authored several other ORNL reports on the SPR.

ernment's inventory is at least one less barrel for private sector inventories. When near-term prices are high relative to future prices (i.e., when the market is in backwardation), refiners are more likely to take oil from their existing stocks than pay for expensive spot market purchases of crude oil.<sup>197</sup> When the U.S. Government increases its own crude oil inventories during a tight market, it further tightens the market—reducing supplies and raising prices—making it even more uneconomic for the private sector to increase commercial inventories.<sup>198</sup>

Although the daily fill rate of the SPR is relatively small compared to daily global consumption and production rates for crude oil, it is sufficient to remove several millions of barrels of crude oil from the market over the course of a few weeks. In a tight market, this marginal reduction in market supplies can cause a corresponding reduction of several million barrels of crude oil from private sector inventories. SPR career officials were well aware of this causal relationship. Exhibit V-4 explains:

Essentially, if the SPR inventory grows, and OPEC does not accommodate that growth by exporting more oil, the increase comes at the expense of commercial inventories. Most analysts agree that oil prices are directly correlated with inventories, and a drop of 20 million barrels over a 6-month period can substantially increase prices. . . . A variation of 3 or 4 million barrels from expected inventory can change prices more than a dollar per barrel during a day. Clearly, a change in private inventories equal to the SPR inventory change could have a substantial price impact.

In a June 5, 2002, memorandum, Exhibit V-9, John Shages predicted the SPR fills would significantly reduce private sector crude oil inventories:

Given OPEC behavior over the last 18 months, I believe OPEC is not accommodating economic growth, much less an inventory drop caused by SPR fill. . . . If you accept the assumption of an intransigent OPEC, then the impact of SPR fill on inventories is not a seemingly innocuous 100,000 barrels per day, but a powerful 30 million barrel reduction of private inventory over 10 months.

Later in the June 5 memo, Mr. Shages discusses the SPR's impact on U.S. inventories as follows: "Think of the deferrals not as a daily flow, but as a change to projected inventory in the private

<sup>197</sup> See, for example, Section IV of this Report, showing how refiners in the Midwest drew upon their crude oil inventories during the spike in near-term WTI prices in April and May 2002.

<sup>198</sup> It has been suggested that each barrel placed into the SPR during a tight market in preparation for an imminent interruption in supply may displace more than one barrel in private sector inventories. Not only is each barrel placed into the SPR one less barrel for use in the private sector, either in a refinery or in storage, but to the extent that producers and refiners know the SPR will be available, they may be less likely to stockpile themselves. For example, one analyst recently commented, "Why were the oil companies holding such huge inventories prior to the Persian Gulf War? You saw a similar buildup prior to the Iran-Iraq war. And why aren't they building them now? . . . [I]t could be that they are relying on the U.S. Strategic Petroleum Reserve, and counting on the government to hold the extra supply for them." Melita Marie Garza, *Fuel Price Escalation Already Spills Into Cost of Other Goods*, Chicago Tribune, January 26, 2003, quoting Bill O'Grady, vice president, futures research, A.G. Edwards.

sector. If, come December 2002, U.S. private inventories are down 30 million barrels of crude oil, we will have higher prices, nervous traders, a more confident OPEC and an [Iraq] that can cause price gyrations by deciding not to renew its export agreements for a month.”

Mr. Shages accurately forecast the decline in U.S. private sector inventories in the latter half of 2002. Figure V-1 shows that, from June to October 2002, U.S. commercial crude oil inventories fell by nearly 50 million barrels, including 1-month drops of 20 million barrels in July and 30 million barrels in September. These large drops in inventories followed price spikes in the WTI market in which near-term crude oil prices exceeded longer-term futures prices (backwardation). By February 2003, U.S. private sector inventories had declined to their lowest levels since the EIA began keeping national inventory data records in 1979.

Not only have U.S. private sector inventories declined to unprecedented low levels, but these levels have become dangerously low—dipping under 270 million barrels which is considered the “Lower Operational Inventory” for the U.S. refining industry. According to the EIA, “While there is nothing to prevent inventories from falling below 270 million barrels, were that to occur, less flexibility would be expected, and according to the National Petroleum Council, localized disruptions in refinery operations could be expected.”<sup>199</sup> U.S. commercial inventories have hovered around the Lower Operational Inventory Level from the latter part of 2002 to the present, risking refinery disruptions due to inadequate supplies.

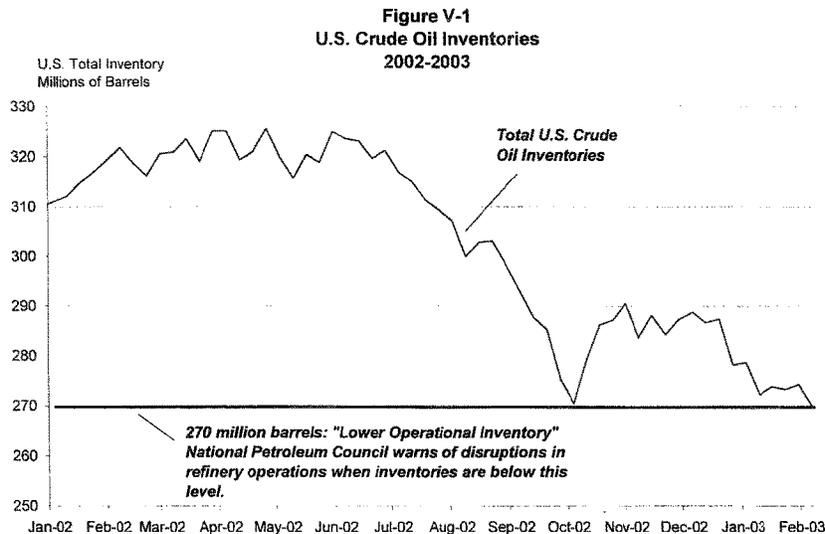


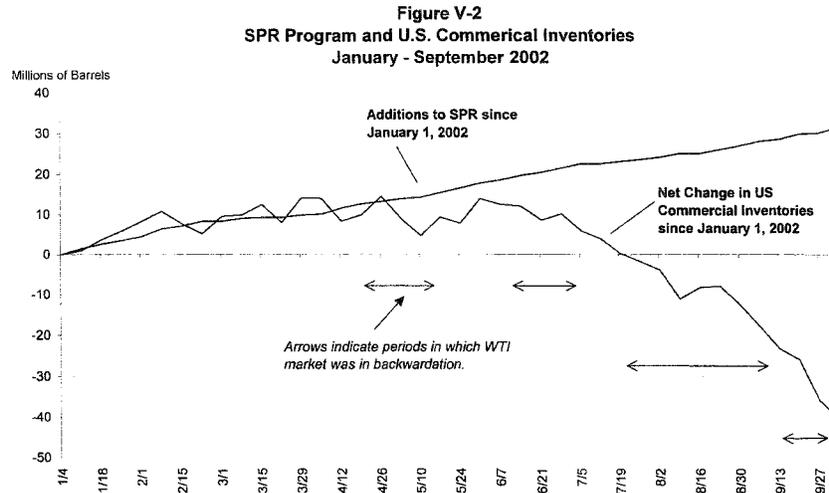
Fig. V-1. From June to October 2002, U.S. private sector crude oil inventories fell to the lowest level on record (since 1979). Source of data: EIA.

Over the same time period, DOE continued to fill the SPR at a steady rate of about 100,000 barrels per day, or about 3 million

<sup>199</sup> EIA, *This Week in Petroleum*, January 15, 2003.

barrels per month, regardless of the tightening market conditions. The total amount of oil deposited into the SPR from June through November exceeded 20 million barrels.

Figure V-2 shows both the increasing deposits into the SPR and the decline in U.S. crude oil commercial inventories during 2002. Figure V-2 also shows the periods in which the WTI market was in backwardation during 2002. When the market is backwardated, the near-term price of crude oil is higher than the price of oil farther in the future. Under these market conditions, refiners will use oil in their existing inventories rather than purchase expensive oil on the spot market. Placing oil into the SPR when near-term prices are relatively high therefore exacerbates the tightness of the market, pushing near-term prices even higher, and providing incentives for refiners to take oil out of inventory. Thus, as can be seen from Figure V-2, depositing oil into the SPR during a tight market has the direct effect of depleting private sector inventories.



**Fig. V-2.** In 2002, the SPR program did not increase total reserves of crude oil in the United States. In effect, DOE's approach to filling the SPR reduced commercial inventories by as much as it increased the SPR inventory. Source of data: EIA.

According to the fundamentals of supply and demand, reductions in crude oil inventories place upward pressure on crude oil prices. By comparing Figure V-1 and Figure V-3, it can be seen that at the same time total inventories dropped from over 320 million barrels at the end of May to just over 270 million barrels by the beginning of October, the spot price of WTI rose from just under \$25 to nearly \$31 per barrel. This relationship between inventory and price is a typical pattern in commodity markets, and was also predicted by SPR career officials in the spring of 2002, in Exhibits V-4, V-7, and V-9. As demonstrated in the case study in Section IV, placing oil into the SPR in a tight market can trigger a vicious cycle of lower inventories and higher prices.

**Figure V-3**  
**WTI and Brent Spot Prices**  
 January 2002 - February 10, 2003

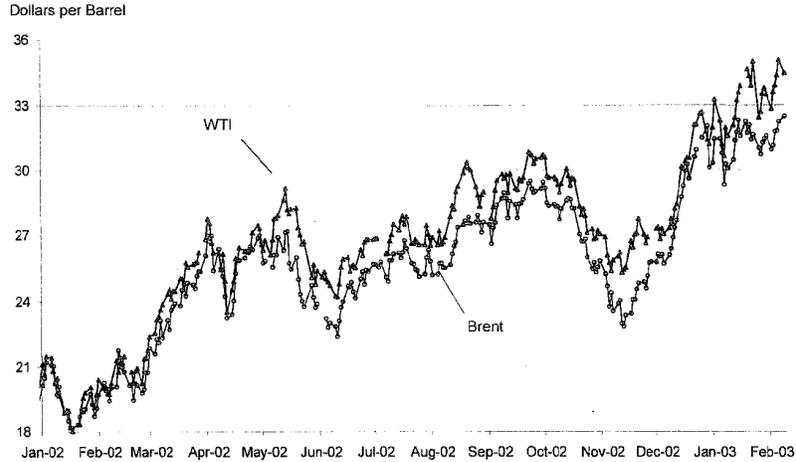


Fig. V-3. WTI and Brent prices nearly doubled in 2002. Source of price data: EIA.

Despite rising oil prices, tight markets, and shrinking commercial inventories throughout the latter half of 2002, DOE kept the SPR no-deferral policy in place. Figure V-4 shows how the SPR continued to fill at a constant rate from October 2001, through the first 9 months of 2002, the period for which the Subcommittee staff obtained detailed SPR program data.

**Figure V-4**  
**SPR Deposits**  
 October 2001 - September 2002

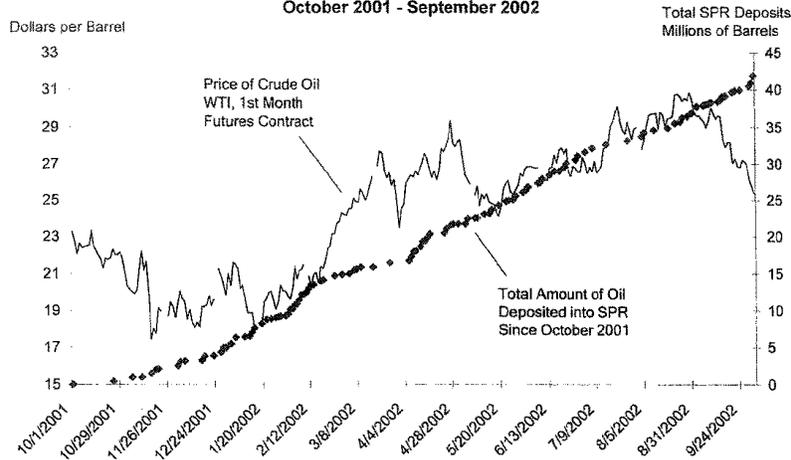


Fig. V-4. Crude oil was deposited into the SPR at a steady rate from October 2001 through September 2002, despite rising oil prices. Source of SPR and price data: DOE, EIA.

The inflexibility of the DOE's no-deferral policy was demonstrated in late September and early October 2002 when DOE insisted upon crude oil deliveries to the SPR even as Gulf Coast refineries were hit by supply disruptions and shut down due to tropical storms battering the Gulf Coast.

In advance of Tropical Storm Isidore in late September, nearly 600 offshore oil and gas rigs in the Gulf of Mexico were evacuated, shutting down 95 percent of crude oil production in the Gulf. Most of the evacuated workers did not return or had to be re-evacuated the next week in advance of Hurricane Lili.<sup>200</sup> In just over 1 week Isidore and Lili together halted the production of about 10 million barrels of crude oil from offshore platforms.<sup>201</sup>

On October 2, 2002, with Hurricane Lili "bearing down" on its Louisiana refinery, its crude oil supplies depleted due to the disruption from Tropical Storm Isidore, its Ohio and Kentucky refineries running at reduced levels due depleted stocks and crude oil market shortages, and with near-term crude oil prices over \$30 per barrel in the backwardated WTI futures market, Marathon Ashland Petroleum (MAP) requested DOE to defer its delivery of 250,000 barrels to the SPR scheduled for October "in hopes that we can prolong or at least expedite the recommencement of refining operations."<sup>202</sup>

DOE denied MAP's request. In an e-mail dated October 7, 2002, Hoot Gibson, the DOE SPR site manager, wrote to other DOE SPR staff: "The SPR policy per [the Deputy Assistant Secretary in the SPR Office at DOE headquarters] on deferrals of in bound crude oil is no deferrals at this time—deliveries should be made per current contract dates. Let me know by e-mail each deferral request received. Any media inquiries should be referred to Ms Rochon who will refer them to the proper contact in HQ. Thank you." On October 10, DOE informed MAP "the SPR is not considering deferrals at the time."

This decision demonstrates DOE was so determined to increase the oil stored in the SRP that it was even willing to risk prolonging refinery slowdowns. Even after being warned by a major U.S. refiner that it lacked enough crude oil to keep its refineries running, DOE insisted that the refiner divert scarce crude oil to the SPR.

The crude oil market deteriorated even further in the last 2 months of the year. The prospect of war between the United States and Iraq, a major global supplier that provides 5–10 percent of U.S. oil imports, increased market uncertainty regarding future crude oil supplies and prices. In early December, Venezuela, a major exporter of crude oil to the United States, began reducing exports to the United States due to labor strikes and political unrest. The coldest U.S. winter in recent years also increased demand for home heating oil, further tightening the crude oil markets.

<sup>200</sup> See John Sullivan, *Double Hit for Oil Industry*, Daily Advertiser (Lafayette, Louisiana), September 26, 2002; Marc Dupee, *Market Eyes Wrath of Hurricane Lili*, October 3, 2002.

<sup>201</sup> John Sullivan, *Double Hit for Oil Industry*, *infra*; Business Wire, *Lili Hits Offshore Hard; Platforms Register 150 mph Winds, 30-foot Swells*, October 4, 2002. Lili was a Category 2 hurricane over Louisiana, but a Category 4 hurricane when it passed over much of the oil and gas production area of the Gulf of Mexico. One company measured 150 mile per hour winds at its production platform; another company reported that its semisubmersible drilling unit had been ripped from its moorings and blown 45 miles away before grounding in 35-foot deep water off the Louisiana coast. *Id.*

<sup>202</sup> See e-mails exchanged between MAP and the SPR Office in Exhibit V–11.

By mid-December 2002, several more refiners warned DOE that the shortage of crude oil imports from Venezuela would lead to refinery outages and requested a deferral of their upcoming shipments to the SPR. Initially, DOE denied these requests.<sup>203</sup> Instead, DOE declared the Venezuela strike a “force majeure” event under the SPR delivery contracts, which would allow a company to defer delivery if it could prove that the oil scheduled for delivery into the SPR had been Venezuelan crude and the company did not have adequate inventories to meet its SPR delivery requirements.<sup>204</sup>

Several days later, however, DOE agreed to allow any company to defer shipments scheduled for December 2002 or January 2003, even without such proof.<sup>205</sup> These were the first SPR deferrals granted in more than a year. According to a public statement by the Secretary of Energy, this change in policy was made to “help ensure that the deliveries will not negatively affect the oil market, while still providing for the energy security of the US.”<sup>206</sup> The result of this decision was that 7.8 million barrels scheduled for delivery in December and January became eligible for deferral.<sup>207</sup> Nearly all of these scheduled deliveries were, in fact, deferred.

As the Venezuelan strike continued into 2003, and war tensions intensified, inventories remained near record lows, just above the “Lower Operational Inventory” level, and crude oil prices continued to mount. In early January 2003, DOE announced that deliveries then scheduled for February 2003—approximately 3 million barrels—were also eligible for deferral.<sup>208</sup>

On January 24, 2003, Senator Levin called on the Administration to suspend further SPR deposits “until surging crude oil prices stabilize and consumers get relief from rising prices for gasoline, home heating oil, and other petroleum products.”<sup>209</sup> Specifically, Senator Levin requested deferral of 4.4 million barrels scheduled to be delivered in March 2003, and of 3.7 million barrels scheduled to be delivered in April 2003.

On January 28, 2003, DOE approved requests from oil companies to delay the 4.4 million barrels scheduled for March delivery, but did not, at that time, delay the deliveries scheduled for April.<sup>210</sup>

One week after granting the deferrals of the March 2003 shipments—presumably to calm crude oil markets—DOE seemed to reverse course again, announcing a further acceleration of shipments into the SPR, beginning in April 2003. The new DOE schedule called for the deposit of an additional 24 million barrels over 6 months. In total, DOE now plans to deposit about 40 million barrels of crude oil into the SPR in 2003.<sup>211</sup> If carried out under current market conditions, these 2003 SPR deliveries will further reduce commercial supplies, further help drive up oil prices, and im-

<sup>203</sup> Cathy Landry, Sheela Ponnusamy, *US DOE Rejects Requests to Defer SPR Deliveries on Venezuela Strike*, Platt’s Oilgram News, December 13, 2002.

<sup>204</sup> *Id.*

<sup>205</sup> Cathy Landry, *US in Negotiations to Defer SPR Oil Deliveries*, *supra* note.

<sup>206</sup> *Id.* This article quoted a DOE spokesman as saying the Secretary made the decision “following consultation with advisors and oil company analysts.” DOE has not provided the Subcommittee with any documentation related to this decision.

<sup>207</sup> Dow Jones Newswire, December 17, 2002.

<sup>208</sup> Oil Daily, *DOE Delays SPR Deliveries*, January 6, 2003.

<sup>209</sup> See Sen. Levin Press Release, Exhibit V-12.

<sup>210</sup> Oil Daily, *DOE Defers SPR Deliveries*, January 28, 2003.

<sup>211</sup> The current schedule of SPR deliveries appears in Section II.C.2.

pose more costs upon U.S. consumers and businesses, again without ensuring any overall increase in U.S. oil supplies.

Since abandoning its market-based strategy for deferring SPR deliveries when crude oil prices are high and supplies tight, the SPR program has failed to develop a consistent, coherent, or cost-effective deferral policy. The last-minute nature of the deferrals granted last December and January, the delay in making a decision on the April deliveries, and the further acceleration of shipments into the SPR in the face of record low inventories and high oil prices, demonstrate that DOE has yet to embrace a market-based policy.

**D. SPR Documents State Filling the SPR Without Regard to Oil Prices Was Not Justified Even If A Major Supply Disruption Were Imminent**

The SPR career official who wrote Exhibit V-4, on options for filling the SPR, states that the SPR Office believes it should not matter to the United States government whether the crude oil then scheduled for delivery to the SPR in 2002 is actually delivered in 2002 or postponed to 2003, even if an “energy supply emergency” were likely to occur within the next year. The reasoning underlying this advice is begun but interrupted in the version of this document provided to the Subcommittee. Exhibit V-4 states:

**The Issue of Urgency to Fill**

As noted above the strongest argument against renegotiating delivery schedules is that there is urgency to fill the Reserve to its capacity. However, given the current outlook for OPEC exports, and commercial inventories, it appears to the SPR Office the Government should be indifferent to deliveries of the outstanding oil accounts receivable in 2002 or 2003. If in fact, a major event is likely to occur within the next year that will cause an energy supply emergency, it is arguably superior to have the

At this point the document ends in mid-sentence, leaving the rest of the page blank.<sup>212</sup>

A clue as to the SPR Office’s reasoning, however, is provided in Exhibit V-9, Mr. Shages’s June 2002 memorandum to Mr. Leiby. In Exhibit V-9, Mr. Shages discusses the costs and benefits of postponing SPR deliveries scheduled for 2002 until 2003. In this memo, Mr. Shages states there is almost no incremental benefit to the SPR from placing an additional 42 million barrels, on top of the 570 million barrels already in the SPR, in 2002 rather than 2003, even if it were known there would be a massive supply disruption in January 2003. The document states:

The volume subject to deferrals at this moment is 42 million barrels, and the period of deferral might be a year. If you ran the [model] and postponed the incremental fill by 1 year (made 2002 fill equal to zero but increased 2003 fill by the same volume) how would the value of the Reserve change? I venture to say almost not at all, because

<sup>212</sup>See footnote 195, *infra*.

the chances of drawing all the oil in the Reserve during the year delay are minute. Furthermore, if I **knew** we were going to have a massive disruption starting in January 2003, given my assumption that OPEC does not accommodate SPR fill with more production, I would doubly insist on deferral because I would rather see a build in private inventories than in SPR inventories.

Thus, in the opinion of this SPR expert, if the United States were facing the prospect of a massive and imminent disruption of oil supplies, U.S. energy security would be better served by building up oil supplies in private sector inventories rather than shifting that oil from the private sector to the SPR.

### E. 2002 SPR Fills Increased Consumer Costs But Not U.S. Oil Supplies

As predicted by DOE SPR officials, filling the SPR without regard to oil prices and tight market supplies helped push up oil prices and deplete U.S. private sector inventories. The case study in Section IV traces how SPR deposits in the spring of 2002 raised the prices of crude oil and related petroleum products, in particular home heating oil, jet fuel, and diesel fuel. Since then, prices for crude oil have continued to climb, recently reaching a peak of nearly \$40 per barrel. Home heating oil, jet fuel, and diesel fuel prices have also continued to climb, and gasoline has recently done so as well. Figure V-5 shows that gasoline prices are now over \$2 per gallon in many markets, record highs for late winter. The continuing record low levels of crude oil in U.S. commercial inventories may lead to additional gasoline price spikes as refiners begin to build gasoline supplies for the spring and early summer driving seasons. The SPR program's record in 2002 demonstrates that, under these market conditions, more deposits of crude oil into the SPR will only exacerbate supply shortfalls and high prices.

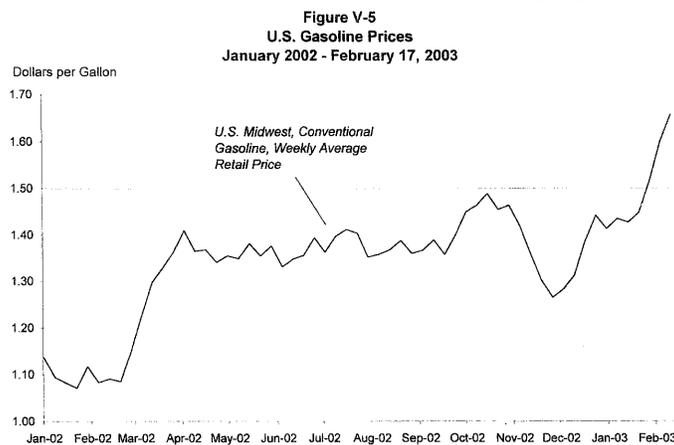


Fig. V-5. By early 2003, gasoline prices had risen about 50 percent from levels in early 2002. Source of data: EIA.

Despite its high cost to U.S. consumers and taxpayers, inventory data indicates that the new SPR fill policy did not increase overall U.S. oil supplies. In 2002, the SPR program put about 40 million barrels of crude oil into the SPR, increasing the total reserves by about 7 percent, from about 560 million to 600 million barrels.<sup>213</sup> Most of this oil was removed from the marketplace, however, when crude oil markets were tight, which increased oil prices and caused U.S. oil refiners to take oil from inventory instead of buying expensive new oil. In 2002, U.S. commercial inventories dropped 10 percent, from about 310 to 280 million barrels. In 2003, commercial inventories dropped again to less than 270 million barrels, dipping below the recognized level at which refinery operations risk disruptions due to inadequate oil supplies.<sup>214</sup> Today, overall oil supplies in the United States, which consist of the oil in the SPR and commercial inventories, total about 870 million, the same amount as at the end of 2001, before the recent SPR fills. Although the SPR program has placed more oil under government control, lower private sector oil inventories mean there has been no net increase in overall national oil supplies.

The benefit to U.S. energy security of shifting oil from private sector control to government control in the SPR, without a net increase in overall oil supplies, is unclear at best, since in the event of a major supply disruption, the SPR would act to release oil on the market, shifting supplies back to the private sector.

Filling the SPR to capacity is intended to strengthen U.S. protections against the “adverse economic impact” of a major oil shortage. But the facts show that the abandonment of the SPR program’s “deliberate” and “cost-effective” market-based approach to filling the SPR, in favor of a market-blind policy of filling the SPR regardless of oil prices, resulted in the depletion of private sector crude oil inventories by at least as much as it has increased governmental reserves, costing U.S. consumers billions of dollars while contributing marginally, if at all, to overall U.S. energy security.

With crude oil prices at a 12-year high, and U.S. commercial crude oil inventories at record lows, it is time for DOE to reassess and revise its policy regarding deferrals of crude oil shipments to the SPR.

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<sup>213</sup> See Figure II-2.

<sup>214</sup> See Figure V-1.



## APPENDIX 1

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### PREVENTING MANIPULATION IN COMMODITY MARKETS

*“The methods and techniques of manipulation are limited only by the ingenuity of man.”*

—*Cargill v. Hardin*, 452 F.2d 1154, 1162 (8th Cir. 1971).

*“Sophisticated economic justification for the distinctions made in this area of law may at times seem questionable. Sometimes the ‘know it when you see it’ test may appear most useful.”*

—*Frey v. CFTC*, 931 F.2d 1171, 1175 (7th Cir. 1991).

**Summary: Manipulation in commodity futures markets is effectively prevented only by a comprehensive oversight program to detect manipulation and an enforcement program to punish manipulation. Because it is so difficult to bring an after-the-fact prosecution for manipulation, it is vitally important to have an effective market oversight program to detect, deter, and prevent manipulations before they occur.**

#### I. OVERVIEW

As Appendix 2 explains, a central purpose of the Commodity Exchange Act (CEA) is to prevent manipulation of the futures markets. To accomplish this objective, the CEA not only contains a provision that makes manipulation a felony, but it also requires approved contract markets to self-regulate to ensure orderly trading and prevent manipulation. It also directs a Federal agency—the Commodities Futures Trading Commission (CFTC)—to oversee operation of the approved markets and to itself perform market oversight and take necessary measures to ensure orderly trading and prevent manipulation. Former CFTC Chairman James Stone explained, “The job of preventing price distortion is performed today by regulatory and self-regulatory rules operating before the fact and by threats of private lawsuits and disciplinary proceedings after the fact. Both elements are essential.”<sup>1</sup>

Congress, the courts, the CFTC, commodity traders, and legal scholars have struggled with the meaning of the term “manipulation” for as long as the law has prohibited it. Nowhere in the CEA

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<sup>1</sup>*In the Matter of Indiana Farm Bureau Cooperative Ass’n, Inc.*, 1982 CFTC LEXIS 25, 72 (Stone, dissenting), Comm. Fut. L. Rep. (CCH) ¶21,796 [’82-’84 Transfer Binder] (CFTC Dec. 17, 1982).

as currently written or any of its predecessors is the term “manipulation” defined. The current body of judicial and administrative case law is confusing and contradictory. Not surprisingly, there is widespread dissatisfaction with the law of manipulation as it currently stands.<sup>2</sup> A common theme of this criticism is that the CFTC and judicial precedents make it too difficult to determine just what activity constitutes a “manipulation” or to prove, after the fact, that a manipulation has occurred.

The difficulties in prosecuting manipulation after-the-fact, outlined in this Appendix, highlight the importance of prospective safeguards in the regulatory system. Former CFTC Chairman James Stone wrote: “The Act envisions a careful balance between preventative regulation and remedial judicial action. To weaken the latter . . . would strengthen the need for the former.”<sup>3</sup>

## II. THE LAW OF MANIPULATION

### A. Anti-Manipulation Prohibition in Commodity Exchange Act

Section 9 of the CEA states makes it a felony punishable by a fine of up to \$1 million or imprisonment for up to 5 years for “Any person to manipulate or attempt to manipulate the price of any commodity in interstate commerce, or for future delivery on or subject to the rules of any registered entity, or to corner or attempt to corner any such commodity.”<sup>4</sup>

Although this is one of the core provisions of the Act, nowhere in the statute or the CFTC’s regulations is the term “manipulation” defined. Moreover, the CFTC, its predecessor agencies, and the

<sup>2</sup>See, e.g., Jeffrey Williams, *Manipulation on Trial*, at 8 (1995) (“Manipulation is a particularly vague offense.”); *In re Soy Bean Futures Litig.*, 892 F. Supp. 1025, 1043 (N.D. Ill. 1995) (“[T]here is a ‘dearth of settled caselaw’ on price manipulation; as a result the courts and the CFTC are still struggling to define the basic elements of the claim and to differentiate between fair means and foul in futures trading.”); Perdue, *Manipulation of Futures Markets: Redefining the Offense*, 56 Fordham L. Rev. 345, 401 (1987) (“Congress, courts, and commentators have condemned manipulation for over 65 years. Despite this long history, manipulation never has been adequately defined.”); Friedman, *Stalking the Squeeze: Understanding Commodities Market Manipulation*, 89 Mich. L. Rev. 30, 31 (1990) (“Congress has been intent on preventing manipulation since the beginning of Federal commodities regulation in the 1920’s, yet courts, administrators, and academic commentators have failed to agree on a sensible approach to the basic question: What is manipulation?”); Markham, *supra* at 283 (“[U]nder present law the crime of manipulation is virtually unprosecutable, and remedies for those injured by price manipulation are difficult to obtain. Moreover, even where a prosecution is successful, the investigation and effort necessary to bring a case will involve years of work, enormous expenditures, as well as an extended trial.”); Lower, *Disruptions of the Futures Market: A Comment on Dealing with Market Manipulation*, 8 Yale J. on Reg. 391, 392 (1991) (“The absence of a clear statutory definition, the elusiveness of the economic concepts involved and the ad hoc nature of the enforcement process has produced a regulatory approach which lacks the clarity and predictability which would allow effective monitoring, early detection and successful prosecution.”); Fischel and Ross, *Should the Law Prohibit “Manipulation” in Financial Markets?*, 105 Harv. L. Rev. 503, 606 (1991) (“Notwithstanding the recent focus on manipulation, however, no satisfactory definition of the term exists. . . . As one commentator has noted, ‘the law governing manipulations has become an embarrassment—confusing, contradictory, complex, and unsophisticated.’”), quoting McDermott, *Defining Manipulation in Commodity Futures Trading: The Futures “Squeeze,”* 74 NW. U. L. Rev. 202, 205 (1979); Pirrong, *Commodity Market Manipulation Law: A (Very) Critical Analysis and a Proposed Alternative*, 51 Wash & Lee L. Rev 945 (1994) (“Evidence abounds that commodity market manipulation law in the United States is extraordinarily confused.”); Kozinn, *Note: The Great Copper Caper: Is Market Manipulation Really a Problem in the Wake of the Sumitomo Debacle*, 69 Fordham L. Rev. 243, 248 (2000) (“[A]ny student of commodity manipulation law will discover a body of law that is ‘a murky miasma of questionable analysis and unclear effect.’”), citing Timothy J. Snider, *2 Regulation of the Commodities Futures and Options Markets*, 12.01, at 12–5 (2d ed. 1995).

<sup>3</sup>*In the Matter of Indiana Farm Bureau Cooperative Ass’n, Inc.*, *supra* at 74–5 (Stone, dissenting).

<sup>4</sup>7 U.S.C.A. § 13(a)(2) (West Supp. 2002).

courts have not been able to arrive at a satisfactory or stable definition of the term. Current case law provides contradictory guidance on the types of market behavior that are considered manipulation.

Much of the confusion is inherent in the concept of manipulation. It is extraordinarily difficult—some would say impossible—to formulate a test that will easily or consistently distinguish between legitimate self-interested market behavior and illegitimate and unfair tactics motivated by greed. As far back as the 1920's, during the consideration of the Future Trading Act, which eventually became the Grain Futures Act and later the CEA, Congress recognized the difficulty in drawing the line between legitimate and illegitimate trading. Senator Norris, Chairman of the Senate Committee on Agriculture and Forestry, stated: “[T]hese things are various and perhaps impossible of direct definition. I do not know how we would draw a definition to bring it home to the individual.”<sup>5</sup> Shortly after the Grain Futures Act was passed, the Grain Futures Administration reported to Congress that “it is practically impossible, merely because a man sells, to prove that he is doing it in order to manipulate the market.”<sup>6</sup> Tommy “the Cork” Corcoran, President Franklin Roosevelt’s legendary lobbyist, once stated with respect to securities manipulation, “you cannot tell at exactly what stage a kitten becomes a cat in determining whether a man bought or sold on the market for the purpose of raising or depressing the price.”<sup>7</sup> Another practical reason for failing to specify the elements of the offense of manipulation “arose from [Congress’s] concern that clever manipulators would be able to evade any legislated list of proscribed actions or elements of such a claim.”<sup>8</sup> To date, no-one has been able to establish a “‘smoking-gun,’ conduct-based test” for manipulation.<sup>9</sup>

Because of the sparse legislative history of the term “manipulation,” the CFTC and the courts have often relied upon Arthur Marsh’s testimony in 1928 before the Senate Agriculture Committee in interpreting what Congress meant by the term.<sup>10</sup> Marsh, a former President of the New York Cotton Exchange, had accused another witness, William Clayton, of manipulating the cotton market in New York, and in so doing provided the following definition of manipulation:

Manipulation, Mr. Chairman, is any and every operation or transaction or practice, the purpose of which is not primarily to facilitate the movement of the commodity at prices freely responsive to the forces of supply and demand; but, on the contrary, is calculated to produce a price distortion of any kind in any market either in itself or in its relation to other markets. If a firm is engaged in ma-

<sup>5</sup> *Future Trading in Grain*, Hearings on H.R. 5676, before the Senate Committee on Agriculture and Forestry, 67th Cong., 1st Sess. 335 (1921); cited in Perdue, *Manipulation of Futures Markets: Redefining the Offense*, 56 Fordham L. Rev. 345, 353, n. 64.

<sup>6</sup> *Commodity Short Selling*, Hearings before the House Committee on Agriculture, 72nd Cong., 1st Sess. 181 (1932); cited in Markham, *supra* at 312.

<sup>7</sup> *Stock Exchange Practices*, Hearings before the Senate Committee on Banking and Currency on S. Res. 84, 56, and 97, pt. 15, 73rd Cong., 1st Sess. 6509 (1934); cited in Markham, *supra* at 366, n. 548.

<sup>8</sup> *In re Soy Bean Futures Litig.*, *supra* at 1044.

<sup>9</sup> Pirrong, *supra* at 992.

<sup>10</sup> See, e.g., *Volkart Brothers, Inc. v. Freeman*, 311 F.2d 52, 58 (5th Cir. 1962).

nipulation it will be found using devices by which the prices of contracts for some one month in some one market may be higher than they would be if only the forces of supply and demand were operative; or using devices by means of which the price or prices of some month or months in a given market may be made lower than they would be if they were freely responsive to the forces of supply and demand. Any and every operation, transaction, device, employed to produce those abnormalities of price relationship in the futures markets, is manipulation.<sup>11</sup>

Clayton denied all accusations of manipulation and complained about the vagueness of the charge. In response to a Senator's question, Clayton remarked, "The word "manipulation" . . . in its use is so broad as to include any operation of the cotton market that does not suit the gentleman who is speaking at the moment."<sup>12</sup>

Several of the elements of manipulation identified by Marsh have become part of the basic test used by Federal courts and the CFTC in determining whether manipulation has occurred. They include: (1) whether the market prices reflect actual conditions of supply and demand or whether the prevailing prices were artificially created by the suspected manipulator; (2) whether the suspected manipulator caused the artificial price; and (3) whether the suspected manipulator intended to cause the artificial price.

In *Cargill v. Hardin*, the U.S. Court of Appeals for the Eighth Circuit provided the most recent Federal appellate exposition on the meaning of "manipulation."<sup>13</sup> Cargill had been charged with manipulating the wheat futures market by controlling nearly two-thirds of the long futures contracts just prior to the close of trading, as well as most of the physical deliverable supply of wheat. The court distinguished between what are perhaps the two most common types of manipulation, a "corner" and a "squeeze." With respect to a corner, the court stated:

In its most extreme form, a corner amounts to nearly a monopoly of a cash commodity, coupled with the ownership of long futures contracts in excess of the amount of that commodity, so that shorts—who because of the monopoly cannot obtain the cash commodity to deliver on their contracts—are forced to offset their contract with the long at a price which he dictates, which of course is as high as he can prudently make it.<sup>14</sup>

The court identified a "squeeze" as "a less extreme situation than a corner," in which:

There may not be an actual monopoly of the cash commodity itself, but for one reason or another deliverable supplies of the commodity in the delivery month are low, while the open interest on the futures market is considerably in excess of the deliverable supplies. Hence, as a practical matter, most of the shorts cannot satisfy their con-

<sup>11</sup> *Cotton Prices*, Hearings before a Subcommittee of the Senate Committee on Agriculture and Forestry, Pursuant to S. Res. 142, 70th Cong., 1st Sess. 201-202; cited in Perdue, *supra* at 362.

<sup>12</sup> *Id.* at 154; cited in Perdue at 355, n. 67.

<sup>13</sup> *Cargill v. Hardin*, 452 F.2d 1154 (8th Cir. 1971).

<sup>14</sup> *Id.* at 1162.

tracts by delivery of the commodity, and therefore must bid against each other and force the price of the future up in order to offset their contracts.<sup>15</sup>

In *Cargill*, the court adopted the following test:

We think the test of manipulation must largely be a practical one, if the purpose of the Commodity Exchange Act is to be accomplished. The methods and techniques of manipulation are limited only by the ingenuity of man. The aim must be therefore to discover whether conduct has been intentionally engaged in which has resulted in a price which does not reflect basic forces of supply and demand.<sup>16</sup>

Relying upon the various judicial precedents, the CFTC has established a four-part inquiry to determine whether manipulation has occurred. In a 1989 decision, *In the Matter of Cox and Frey*,<sup>17</sup> the CFTC stated that in order to sustain a charge of manipulation, the CFTC must demonstrate, by a preponderance of the evidence, that:

- (1) the accused had the ability to influence market prices;
- (2) the accused specifically intended to do so;
- (3) artificial prices existed; and
- (4) the accused caused the artificial prices.<sup>18</sup>

A review of the judicial and CFTC caselaw indicates that establishing each of these elements is an extraordinarily difficult task.

### 1. Market Power

The first factor, the ability to influence market prices, requires a determination of whether the person accused of manipulation of the price of a commodity had sufficient market power to affect the market price of the commodity, and whether alternative supplies of the commodity were reasonably available to market participants. The two parts of this factor are inter-related and often dissolve into disputes over the appropriate scope of the market to be analyzed.

Federal courts have disagreed over which facts are sufficient to establish market power, the scope of available substitute commodities, and the obligation of commodity traders to purchase such substitutes. In *Great Western Food Distributors v. Brannan*,<sup>19</sup> for example, Great Western Foods was accused of manipulating the price of refrigerated eggs by obtaining possession and control of the supply of deliverable, refrigerated eggs in the Chicago area as well as ownership of between 60 and 75 percent of the open long futures

<sup>15</sup>*Id.* The *Cargill* court noted that not all squeezes are caused by intentional manipulations, but may also result from "natural market forces," such as natural disasters that destroy the supplies of the commodity. The court cautioned that a person who finds himself with supplies in such circumstances does not have a license to extract as high a price as possible:

[G]iven a shortage of deliverable supplies for whatever reason, the futures prices can be manipulated by an intentional squeeze where a long acquires contracts substantially in excess of the deliverable supply and so dominates the futures market—i.e., has substantial control of the major portion of the contract—that he can force the shorts to pay his dictated and artificially high prices in order to settle their contracts.

<sup>16</sup>*Cargill v. Hardin*, 452 F.2d at 1163.

<sup>17</sup>1987 Westlaw 106879 (C.F.T.C.)

<sup>18</sup>*Id.*

<sup>19</sup>*Great Western Food Distributors, Inc. v. Brannan*, 201 F.2d 476 (7th Cir. 1953).

contracts in the week before the futures contract expired. Under these circumstances, the open short contracts were required to bid up the price of the scarce remaining supplies of eggs in the Chicago area in order to avoid default on their contracts for delivery. In addition to finding that Great Western Foods dominated the physical supply of refrigerated eggs in the Chicago area, the court found that fresh eggs “customarily range higher in price than refrigerators,” and therefore “were generally not contemplated as part of the supply for these futures transactions.”<sup>20</sup> The court found that “out of town prices plus freight and differential charges render out of town eggs more costly for delivery on Chicago contracts than local eggs,” and therefore there was ample justification for the conclusion that Great Western Foods “held a controlling position in the available cash supply of eggs deliverable on December futures contracts.”<sup>21</sup>

In another case involving the availability of substitutable supplies, *Volkart Brothers v. Freeman*,<sup>22</sup> the Fifth Circuit Court of Appeals reached a contradictory result. Under the futures contract at issue in this case, only certificated cotton could satisfy the contract delivery requirement. Nevertheless, the court held that the supply of cotton that had not yet been certificated prior to the last day of trading must be considered as part of the available supply of certificated cotton where a party stands accused of squeezing the contract for certificated cotton on the last day of trading. The court wrote, “Unless the shorts are to be excused from the performance of their contracts and from the exercise in due diligence to that end, the ample supply of uncertificated cotton must be considered as available to them.”<sup>23</sup> In light of the availability of uncertificated cotton, the court overturned the agency’s finding of manipulation of the price of certificated cotton.

In *Cargill v. Hardin*,<sup>24</sup> the Eighth Circuit rejected the Fifth Circuit’s reasoning in *Volkart* that the shorts had an obligation to secure supplies of uncertificated cotton to reduce congestion in the delivery of certificated cotton. Cargill was charged with manipulating the futures market for soft red winter wheat after accumulating 62 percent of the open long interest in soft red winter wheat futures—nearly 2 million bushels—just prior to the close of trading on the contract, as well as holding most of the cash market supply of soft red winter wheat in Chicago warehouses. In determining that Cargill had sufficient market power to find manipulation, the court of appeals found that due to differences in use, price, and quality, the supplies of hard wheat in the Chicago area were not “reasonably interchangeable” with the deliverable supplies of soft wheat. The court concluded, “Since there was no soft red winter wheat available in significant quantities from sources other than Cargill, the conclusion is inescapable that the shorts could not fulfill their contracts, at least to the extent of 2,000,000 bushels, without coming to Cargill.”<sup>25</sup>

With respect to *Volkart*, the Eighth Circuit stated:

<sup>20</sup> *Id.* at 480.

<sup>21</sup> *Id.* at 481.

<sup>22</sup> *Volkart Brothers v. Freeman*, 311 F.2d 52 (5th Cir 1962).

<sup>23</sup> *Id.* at 60.

<sup>24</sup> *Cargill v. Hardin*, *supra*.

<sup>25</sup> *Id.* at 1167.

If in a squeeze situation, the shorts must be forced either to pay manipulated prices to offset their contracts or in the alternative to bring in higher priced outside supplies which are neither wanted nor needed in the local market, then both the cash and the futures market will be dislocated. . . . [W]e have been shown no good reason why the futures price should reflect the cost of bringing in a higher price and grade of wheat for which there is no demand in the local area. . . .<sup>26</sup>

Despite the more recent ruling in *Cargill*, the CFTC has followed the *Volkart* reasoning on several occasions. In *In re Indiana Farm Bureau*, for example, the CFTC majority found that it was “irresponsible market behavior for shorts to enter the delivery month, especially where low cash supplies are evident, without making adequate delivery preparations.”<sup>27</sup> The CFTC seemingly sanctioned squeezes that were not “intentionally created” when it stated, “[w]here a long has not intentionally created or exploited a congested situation, the long has a contractual right to stand for delivery or exact whatever price for its long position which a short is willing to pay in order to avoid having to make delivery.”<sup>28</sup>

In *Indiana Farm Bureau*, CFTC Chairman Johnson concurred with the result, but dissented from this reasoning. “I cannot join in the majority’s view,” the Chairman wrote, “that it is the ‘contractual right’ of longs to demand as high an offset price as possible from the shorts during periods of natural market congestion.”<sup>29</sup> Commissioner Stone also dissented from the majority’s holding regarding the ability of the longs to extract as high a price as possible, writing that this approach “runs contrary to many years of marketplace and regulatory tradition. . . . The surveillance budgets of regulators and self-regulators alike are largely devoted to avoiding the extraction of premiums over cash prices in congested markets. It is a dramatic break from the past if the Commission majority now thinks it legal to extract a substantial premium so long as as this was not the original purpose of the dominant player at the time the congestion was initiated.”<sup>30</sup>

In 1987, in *In re Cox and Frey*, a majority of the CFTC commissioners again reasoned it was primarily the obligation of the shorts to avoid congestion by securing adequate supplies of a deliverable commodity prior to contract expiry, rather than the obligation of the longs to refrain from exploiting such congestion.<sup>31</sup> In *Cox*, the CFTC stated “[t]he fact that the local supply of a commodity is scarce does not release the shorts from their obligation to honor their contractual commitments to deliver. We do not believe that a valid analysis of deliverable supply can be made in the context of the last trading day.” The CFTC rejected the position that “premium grades of a commodity at out-of-town locations must routinely be excluded from deliverable supply calculations.”<sup>32</sup>

<sup>26</sup>*Id.* at 1173.

<sup>27</sup>*In re Indiana Farm Bureau* (1982), *supra* at 31.

<sup>28</sup>*Id.*

<sup>29</sup>*Id.*, at 59.

<sup>30</sup>*Id.*, at 107–9.

<sup>31</sup>*In re Cox and Frey*, CFTC Docket No. 75–16, 1987 WL 106879 (C.F.T.C.), July 15, 1987.

<sup>32</sup>*Id.*, at 5.

Commissioner West dissented, stating, “to simply define the market congestion out of existence because the Commission felt the shorts were negligent amounts to establishing a “contributory negligence” standard which creates an absolute shield for the longs no matter how egregious their aberrant behavior.”<sup>33</sup> Commissioner West added, “If a bank leaves its vault open overnight and a burglar takes the money, the burglar cannot escape guilt based on the bank’s negligence. . . . Two wrongs do not make a right.”<sup>34</sup>

Commissioner West agreed with the CFTC staff’s argument that under the *Volkart* standard, “the more successful the upward price manipulation, the larger the deliverable supply will be, since at artificially high prices parties can profit by disrupting the normal flow of the cash commodity and making delivery to the manipulator on the futures market. At some point, the manipulated futures price will be high enough to warrant shipments of wheat into Chicago from around the country, or even around the world.”<sup>35</sup>

The conflict over the appropriate scope of the relevant market is a key contributor to the confusion in the law of manipulation. One noted analyst summed up the problem:

[T]he analysis of deliverable supplies resembles the vacuous debates over market definition that occur in anti-trust cases. . . . [A]ccused manipulators attempt to define the market as broadly as possible, and the accusers attempt to define it as narrowly as possible. . . . If manipulation cases turn on definitions of deliverable supplies, they may simply decay into struggles to draw firm boundaries where none naturally exist. Establishing the quantity of a commodity available at the competitive price requires information on the value of alternative uses of the various stocks. . . . [D]eliverable supply estimates provide little information not already contained in prices, and making a manipulation conviction turn on inevitably artificial estimates of supplies invites confusion and contradiction.<sup>36</sup>

## 2. Specific Intent to Create an Artificial Price

In the recent *Sumitomo* case involving manipulation of the copper markets, the CFTC stated “the intent to create an artificial or distorted price is the sine qua non of manipulation.”<sup>37</sup>

Quoting *Volkart*, the CFTC said “there must be a purpose to create prices not responsive to the forces of supply and demand; the

<sup>33</sup> *Id.*, at 16.

<sup>34</sup> *Id.*, at 20.

<sup>35</sup> *Id.*, at 17.

<sup>36</sup> Pirrong, *supra* at 974. This article approved of the holdings in *Cargill* and *Great Western*, “which imply that shorts are not obligated to purchase fancy grades, or to go outside the delivery market, in order to acquire deliverable supplies.” *Id.* at 975. It was extremely critical of the CFTC’s reasoning in *Cox* (“defies logic”) and similar arguments in *Indiana Farm Bureau* (“egregious errors”). The author contended that under these two decisions and *Volkart*, “it is nearly impossible to find a long guilty of market power manipulation.” *Id.* at 976. See also Markham, *supra* at 355 (“Following the decision in *Cox*, the CFTC’s Division of Enforcement was left with an almost impossible burden of proof in proving manipulation.”); Perdue, *supra* at 377 n.192 (“But few courts agree on how broadly to construe this concept: should it include, for example, only those goods that were in fact deliverable at the expiration of the contract, or should it include goods that could have been made deliverable if the necessary steps had been taken? . . . The courts seem to lack any coherent theory in analyzing these questions, and the approaches vary considerably.”).

<sup>37</sup> *In re Sumitomo Corporation*, 1998 CFTC LEXIS 96; Comm. Fut. L. Rep. (CCH) ¶27,327, at 16.

conduct must be calculated to produce a price distortion.”<sup>38</sup> “At bottom,” according to the CFTC and the courts, manipulation is “the creation of an artificial price by planned action, whether by one man or a group of men.”<sup>39</sup>

In several recent administrative cases the CFTC has emphasized that the degree of intent required to establish that a manipulation has occurred is not simply a general intent to undertake the conduct in question, but rather it is conduct undertaken with a manipulative intent akin to the *mens rea* requirement in the criminal law. In other words, the accused must actually have intended that an artificial price result from his or her conduct.

Similar to proving intent to fix prices or restrain trade in violation of the antitrust laws, proving specific intent in commodity price manipulation cases necessarily relies on circumstantial evidence. The CFTC has explained, “Since it is impossible to discover an attempted manipulator’s state of mind, intent must of necessity be inferred from the objective facts and may, of course, be inferred by a person’s actions and the totality of circumstances.”<sup>40</sup>

The CFTC has found several fact patterns to be indications of manipulative intent. The purposeful reduction of supplies in a tight market is one such indication. In a case involving an alleged squeeze of the frozen concentrated orange juice market, the CFTC stated that “manipulative intent may be inferred when the holder of a long position increases his position despite knowledge of a congested situation in the underlying contract.”<sup>41</sup> Put another way, “a congested market is not an appropriate venue for unrestrained self-interest.”<sup>42</sup>

On the other hand, the CFTC will not find manipulation when a trader merely holds out for the best price in a congested market, for example where the futures contract is near expiration and the physical supply of the commodity is insufficient to cover the outstanding future contracts requiring delivery. “Seeking the optimum price from the futures market (risking, of course, the possibility of delivery) is not unlawful. Manipulative intent may be inferred, however, where, once the congested situation becomes known to him, the long exacerbates the situation by, for example, intentionally decreasing the cash supply or increasing his long position in the futures market.”<sup>43</sup>

The distinction between taking advantage of a “natural” squeeze or congestion by holding out for a higher price, versus intentionally

<sup>38</sup>*Id.*, quoting *Volkart Brothers, Inc. v. Freeman*, 311 F.2d 52, 58 (5th Cir. 1962).

<sup>39</sup>*Id.*, quoting *General Foods Corp. v. Brannan*, 170 F.2d 220, 231 (7th Cir. 1948).

<sup>40</sup>*In re Indiana Farm Bureau Cooperative Ass’n, Inc.*, 1982 CFTC LEXIS 25, Comm. Fut. L. Rep. (CCH) ¶21,796 [’82-’84 Transfer Binder] (CFTC Dec. 17, 1982). See also *In the Matter of Graystone Nash, Inc., et al.*, 1996 SEC LEXIS 3545 (SEC June 27, 1996) (proof of manipulation under the Securities Exchange Act “almost always depends on inferences drawn from a mass of factual data. Findings must be gleaned from patterns of behavior, from apparent irregularities, and from trading data. When all of these are considered together, they can emerge as ingredients in a manipulative scheme designed to tamper with free market forces.”); citing *Herman & MacLean v. Huddleston*, 459 U.S. 375, 390–91 n.30 (1983); *Santa Fe Industries v. Green*, 430 U.S. 462, 475 (1977); *Pagel Inc. v. SEC*, 803 F.2d 942, 946 (8th Cir. 1986); *Mawod & Co.*, 591 F.2d 588, 596 (10th Cir. 1979).

<sup>41</sup>*In re Louis Abrams and Theodore Butler*, 1993 CFTC LEXIS 136, at \*14 (CFTC, May 4, 1993).

<sup>42</sup>*In re Louis Abrams*, 1995 CFTC LEXIS 196, at \*10, Comm. Fut. L. Rep. (CCH) ¶26,479 (CFTC, July 31, 1995).

<sup>43</sup>*In re Indiana Farm Bureau Cooperative Ass’n, Inc.*, 1982 CFTC LEXIS 25, Comm. Fut. L. Rep. (CCH) ¶21,796 [’82-’84 Transfer Binder] (CFTC Dec. 17, 1982).

creating or exacerbating such conditions by purposely reducing or withholding the supply of the deliverable commodity, has caused controversy and confusion. As one commentator put it:

The doctrine of a “natural” squeeze provides a large trader with a manipulation option; if the trader creates a large long position for a legitimate hedging or speculative purpose, the trader can exercise his option to squeeze the market if conditions subsequently change to make manipulation profitable. One can imagine the havoc that would result if judges were to find only those who meticulously planned a murder guilty of the crime and to free those who merely killed impulsively when the opportunity presented itself. The precedents in manipulation law create the conditions for such chaos in futures markets.<sup>44</sup>

Another commenter has noted that persons seeking to manipulate the price of a commodity are not likely to be thinking about whether the affected price levels are “artificial” or do not reflect the forces of supply and demand; the traders only intend “to make as much money as possible.” “To frame an intent element in terms of something that most manipulators have either never thought of, or if they have thought of it, are totally indifferent to, simply invites unnecessary complication. . . . [C]ourts either must rely on convoluted notions of intent or attribute to people intentions and expectations bearing little relation to what they actually think about or even reasonably can be expected to think about.”<sup>45</sup>

### **The Law of Manipulation Under British Commodity Law**

Like U.S. law, U.K. commodities law distinguishes between a legal squeeze, which results from legitimate commercial transactions, and an “abusive” squeeze, which results from trading activity undertaken partially for the purpose of “positioning the price at a distorted level.” The U.K. Financial Services Authority (FSA) Handbook, which incorporates the Code of Market Conduct, the law governing the operation of financial and commodity markets in the U.K., explains, “Squeezes occur relatively frequently when the proper interaction of supply and demand leads to market tightness, but this is not of itself abusive.”<sup>46</sup>

British law does not prohibit conduct that results in a squeeze if the trading activity is undertaken for a legitimate commercial justification other than to squeeze the market. According to the FSA Handbook, the U.K. Code of Market Conduct “does not restrict market users trading significant volumes where there is a legitimate purpose for the transaction . . . and where the transaction is *executed* in a proper way, that is, a way which takes into account the need for the market as a whole to operate fairly and efficiently.”<sup>47</sup>

<sup>44</sup> Pirrong, *supra* at 987.

<sup>45</sup> Perdue, *supra* at 375–6.

<sup>46</sup> FSA Handbook, Release 002, at § 1.6.15 (December 2001).

<sup>47</sup> *Id.*, § 1.6.10.

Under U.K. law, an abusive squeeze of a commodity occurs when a person with (1) “a significant influence over the supply of, or demand for, or delivery mechanisms for a . . . *relevant product*”; and (2) a position . . . in an *investment* under which quantities of the . . . *relevant product* in question are deliverable; engages in *behaviour* with the purpose of positioning at a distorted level the price at which others have to deliver, take delivery, or defer delivery to satisfy their obligations.”<sup>48</sup> The Code notes that price distortion “need not be the sole purpose of entering into the transaction or transactions, but must be an *actuating purpose*.”

### 3. Artificial Price

As one CFTC Commissioner wrote, although “[p]rice artificiality is an essential ingredient of a completed manipulation,” establishing artificiality is not sufficient to establish that manipulation has occurred in violation of the Act. “It is like a new cadaver at the morgue, a trigger for further inquiry but not in itself the proof of an offense.”<sup>49</sup>

Although the concept of an artificial price appears to be straightforward and intuitive, the means for determining whether the price of a commodity is “artificial” has proved to be remarkably difficult. “Defining manipulation as the creation of an artificial price simply substitutes one unhelpful term for another.”<sup>50</sup> Part of the difficulty stems from the fact that the futures market itself is an “artificial” creation and there is no fixed baseline against which to measure the performance of the market. Moreover, to the extent that buyers and sellers seek to bid the price of the commodity up or down in any given transaction, any resulting price from such transactions could be termed “artificial.”<sup>51</sup>

In examining an allegation of manipulation of the price of a commodity, both the courts and the CFTC have examined the “web of prices” in the various cash and futures markets for that and related commodities. These inquiries have analyzed the relationship between the price of the affected commodity in the affected market with the contemporaneous spot and futures prices of the commodity in other markets; the price of related commodities; the relationship between the near-term and the long-term price for the commodity

<sup>48</sup>*Id.*, at § 1.6.13E.

<sup>49</sup>*Indiana Farm Bureau*, *supra* at 75–6 (Stone, dissenting).

<sup>50</sup>*Id.* at 348. In *Indiana Farm Bureau*, *supra* at 9, the CFTC stated, “When the aggregate forces of supply and demand bearing on a particular market are all legitimate, it follows that the price will not be artificial. On the other hand, when a price is effected [sic] by a factor which is not legitimate, the resulting price is necessarily artificial. Thus, the focus should not be as much on the ultimate price, as on the nature of the factors causing it.”

Commissioner Stone took issue with the majority’s statement. “To make the identification of illegitimate market forces a prerequisite for a finding of artificial price is an insufficient improvement. Legitimacy with respect to supply and demand is undefined in law and economics.” *Id.* at 80 (Stone, dissenting).

<sup>51</sup> “[T]he determination of the ‘true’ economic price will turn on an after-the-fact economic analysis of the price a willing buyer and a willing seller would have paid in the absence of the manipulation. But this economic analysis is so complicated and affected by so many factors that it is often impossible to determine what the ‘true’ price was.” Markham, *supra* at 284. See also Fischel and Ross, *supra* at 546 (“None of these tests distinguishes artificial prices from non-artificial prices because, whenever unusual conditions of supply and demand occur, such comparisons will demonstrate that prices are ‘unusual.’”).

on the futures markets, and historical price data.<sup>52</sup> This effort may entail a very complex factual and economic analysis. Indeed, the complexity of the analysis required to thoroughly analyze the requisite amount of market data “may strain the competence of the regulatory agency and the budget of the respondent to the point that it is unlikely to be undertaken in particular cases.”<sup>53</sup>

#### 4. Causation

The problems with proving that a trader “caused” an artificial price are closely related to the problems in defining the relevant market and in determining the alleged manipulator’s intent. Since there are always two parties to any transaction in the futures market, it may be impossible to determine which party “caused” an increase in price. “Asking whether the buyer or the seller ‘caused’ the price, thus is useless—like trying to cut with only one blade of a scissor. . . . There simply exists no meaningful way to determine who, in the two-sided bargaining process, ‘caused’ the price.”<sup>54</sup>

In most instances the spot and futures prices of a commodity at any time are determined by a multitude of factors—aggregate supply and demand, political events, logistical disturbances, to name a few. Indeed, what makes a market a market is that the various participants have differing views as to the influence of each of those factors on prices. If there were no uncertainty or difference of opinion regarding how each of those factors affected the future price of a commodity, there would not be much of a futures market. Isolating and quantifying, in retrospect, the price impact of any single one of the many factors and how the various market participants reacted to that factor, would be an impossible task in many situations.<sup>55</sup>

In *Volkart, Indiana Farm Bureau*, and *Cox*, responsibility for a price increase was placed upon the shorts, who were found culpable for failing to arrange for delivery of a substitute commodity. In situations like these, the longs will not be found to have caused the increase in price.

The conflicts in existing case law has led one observer to conclude, “major precedents concerning the evidence necessary to determine causation in a manipulation case may provide substantial legal shelter to a cornerer. Most importantly, the potential for the accused to refute causation by convincing a court or commissioners that the deliverable supply is large may allow him to escape unscathed.”<sup>56</sup>

<sup>52</sup> See, e.g., *Cargill v. Hardin*, *supra*. An exposition of the obstacles one faces in proving that a prevailing price was “artificial” is found in Stanford University Professor Jeffrey Williams’s *Manipulation on Trial*, an account of one of the civil lawsuits resulting from the Hunt brothers’ near-cornering of the silver market.

<sup>53</sup> Gray, *Economic Evidence in Manipulation Cases*, CBOT Seminar Report on Research on Speculation 108, 110 (Nov. 1980); quoted in *Perdue*, *supra* at 368 n.136.

<sup>54</sup> *Perdue*, *supra* at 376.

<sup>55</sup> One of the expert witnesses in the litigation that followed the Hunt manipulation of the silver market concluded: “Most frustrating to those concerned with commodity markets, the Hunt trial did not resolve the extent to which the Hunts caused the price spike. The trial itself was filled with the ambiguity, contradictions, and inconclusiveness found in the turmoil in the silver market during 1979 and 1980.” Williams, *supra* at 4.

<sup>56</sup> Pirrong, *supra* at 984.

## 5. Summary

The CEA does not define the offense of “manipulation” and the case law is confusing and contradictory. Despite the extensive analysis and criticism of the current law of manipulation, no one has yet formulated an alternative standard that would satisfy all of the problems that have been identified with the current law or the proposed alternatives. And there is not much reason for optimism that additional analysis ever will find one. In the final analysis, the concept of manipulation may necessarily remain ambiguous. After struggling with the definition of manipulation during the Hunt brothers’ trial for manipulating the silver market, one of the lawyers for the plaintiffs commented, “[T]he flexible, open-ended concept of manipulation should continue to prevail over any fixed formula rigidly defining manipulation. Otherwise, the creation of the next new form of manipulation will be encouraged rather than deterred.”<sup>57</sup>

One Federal appellate court has likened the difficulty in defining manipulation to Supreme Court Justice Potter Stewart’s legendary observation about the difficulty in defining obscenity: “Sophisticated economic justification for the distinctions made in this area of law may at times seem questionable. Sometimes the ‘know it when you see it’ test may appear most useful.”<sup>58</sup>

The difficulties in defining the offense of manipulation and in proving, after-the-fact, manipulation has occurred means that it is extraordinarily difficult to prosecute claims of manipulation. One former Chief Counsel of the CFTC Division of Enforcement has written, “[U]nder present law the crime of manipulation is virtually unprosecutable, and remedies for those injured by price manipulation are difficult to obtain. Moreover, even where a prosecution is successful, the investigation and effort necessary to bring a case will involve years of work, enormous expenditures, as well as an extended trial.”<sup>59</sup> Other former senior CFTC officials interviewed by the Subcommittee staff agreed that retrospective manipulation cases were exceedingly difficult to prosecute. Current CFTC staff interviewed by the Subcommittee staff indicated that as a general matter manipulation cases entailed extensive market analysis, required heavy use of staff resources, were generally vigorously contested by the parties, and took years to prosecute.

In light of the current state of the law, the following observation sensibly warns against heavily relying on after-the-fact prosecutions to deter manipulation:

[T]he current precedents make it extremely difficult to find a trader guilty of manipulation even in cases in which the economic analysis suggests that the trader has indeed manipulated. Given this state of affairs, *ex post* deterrence is currently a weak bulwark against future manipulations.<sup>60</sup>

<sup>57</sup> Williams, *supra* at xviii (Foreword of Thomas O. Gorman).

<sup>58</sup> *Frey v. CFTC*, 931 F.2d 1171, 1175 (7th Cir. 1991). See also, Lower, *Disruptions of the Futures Market: A Comment on Dealing with Market Manipulation*, 8 Yale J. on Reg. 391 (1991).

<sup>59</sup> Markham, *supra* at 282.

<sup>60</sup> Pirrong, *supra* at 959.

## B. Market Oversight to Detect and Prevent Manipulation

### 1. CFTC Market Oversight

The goals of the CFTC's market oversight and surveillance program are to preserve the "economic functions of the futures and option markets under its jurisdiction by monitoring trading activity to detect and prevent manipulation or abusive practices, to keep the Commission informed of significant market developments, to enforce Commission and exchange speculative position limits, and to ensure compliance with Commission reporting requirements."<sup>61</sup> The CFTC's market surveillance program seeks to "identify situations that could pose a threat of manipulation and to initiate appropriate preventive actions. Each day, for all active futures and option contract markets, the Commission's market surveillance staff monitors the daily activities of large traders, key price relationships, and relevant supply and demand factors in a continuous review for potential market problems."<sup>62</sup>

In physical commodity markets, the CFTC will most closely examine those situations in which the market is most susceptible to manipulation—when the deliverable supply of the commodity is small in relation to the outstanding positions held by traders. In these circumstances, the CFTC will examine the positions held by the largest long traders, the deliverable supplies not already owned by those traders, whether the long traders are likely to demand delivery, whether the short traders are capable of making delivery, and the price of the commodity on the futures market near contract expiration as compared to the price of the commodity on the cash market.

The CFTC explains how it analyzes market information:

Surveillance economists prepare weekly summary reports for futures and options contracts that are approaching their critical expiration periods. Regional surveillance supervisors immediately review these reports. Surveillance staff advise the Commission and senior staff of potential problems and significant market developments at weekly surveillance meetings so that they will be prepared to take prompt action when necessary.<sup>63</sup>

A more colorful description of the weekly surveillance meetings is found in Stephen Fay's *Beyond Greed*, a tale of the Hunt brothers' attempt to corner the silver market:

The significant business of the CFTC takes place on Friday mornings, behind closed doors, in a gloomy, top-floor back room. The room is dominated by a large, round, laminated table, cluttered with pencils, pads, and microphones—which are there not to make the conversation but to tape it for the record. The commissioners listen to the weekly surveillance briefings, in which the staff discuss price fluctuations and reveal any substantial changes in

<sup>61</sup>CFTC, *The CFTC Market Surveillance Program*, at CFTC website: <http://www.cftc.gov/opa/backgrounder/opasurveill.htm>.

<sup>62</sup>*Id.*

<sup>63</sup>*Id.*

the positions of market traders and big speculators, which must be reported confidentially to the CFTC each day.<sup>64</sup>

According to CFTC staff, no written record is kept of these meetings and “what happens in the room stays in the room.”<sup>65</sup>

If the CFTC believes that a market is unduly congested or there is a threat of manipulation, it may take any one or more of a variety of actions, either formal or informal, to ensure that trading remains orderly. Generally, the CFTC’s oversight program obtains information from and shares information with the affected futures exchanges, and corrective actions are coordinated.

The CFTC explains the types of informal action it may take with an exchange to maintain orderly trading:

Potential problem situations are jointly monitored and, if necessary, verbal contacts are made with the brokers or traders who are significant participants in the market in question. These contacts may be for the purpose of asking questions, confirming reported positions, alerting the brokers or traders as to the regulatory concern for the situation, or warning them to conduct their trading responsibly. This “jawboning” activity by the Commission and the exchanges has been quite effective in resolving most potential problems at an early stage.<sup>66</sup>

Current and former CFTC officials interviewed by the Subcommittee staff believe that “jawboning” is an effective tool to prevent manipulations in commodity markets. One former CFTC official stated that the Chairman of the Commission would make perhaps five or six telephone calls per year to “jawbone” with exchange officials, top company officers, and large traders. These officials believe that the CFTC’s anti-manipulation program is far more successful as a result of this behind-the-scenes action than indicated by information on the public record, including administrative and judicial decisions in after-the-fact CFTC prosecutions.

If neither the exchanges nor jawboning by the CFTC alleviates the agency’s concerns regarding the potential for manipulation, the CFTC has a wide range of “emergency powers” that it can exercise to maintain order in the markets. In an emergency the CFTC can require the liquidation of positions, establish limits on positions in the market, extend the period for delivery under futures contracts, or, in the extreme, close the market.<sup>67</sup> The CFTC has used these emergency powers sparingly. “The fact that the CFTC has had to take emergency actions only four times in its history demonstrates its commitment to not intervene in markets unless all other efforts have been unsuccessful.”<sup>68</sup>

<sup>64</sup> *Beyond Greed*, *supra* at 109–110.

<sup>65</sup> Interview with Subcommittee staff.

<sup>66</sup> *The CFTC Market Surveillance Program*.

<sup>67</sup> In *Beyond Greed*, Fay notes “there is virtually nothing the CFTC cannot do” in the face of “threatened . . . or actual manipulations” to ensure the orderly operation of the market. But, writes Fay, “There is just one drawback to this panoply of regulatory power: the act omits any definition of ‘manipulation’ or ‘squeeze’ or ‘corner.’ Moreover, the CFTC is committed to show intent to manipulate—a difficult thing to do even in so apparently straightforward a case as Bunker and Herbert’s excursion into soybeans in 1977. This is the Catch-22 of commodities regulation: the law gives the CFTC immense power, and makes it almost impossible to deploy it.” *Id.* at 112.

<sup>68</sup> *The CFTC Market Surveillance Program*.

The CFTC obtains the information it uses to analyze the futures markets from publicly available sources, daily reports provided by the exchanges, and from its large-trader reporting system. Publicly available data includes information on supply and demand conditions, price information, trading volumes and open interest data on the number of outstanding long and short contracts. The exchanges report daily to the CFTC on the daily positions and trades of the members of their clearing houses. This information identifies the firms that hold the largest positions in the market, or that clear the largest trades, but it does not identify the firms or persons that actually hold the underlying positions. To determine this latter information, the CFTC relies upon the large-trader reporting system.<sup>69</sup>

The CFTC recently testified before the Congress on the importance of the large-trader reporting system:

The heart of the Commission's direct market surveillance is a large-trader reporting system, under which clearing members of exchanges, commodity brokers (called futures commission merchants, or FCMs), and foreign brokers electronically file daily reports with the Commission. These reports contain the futures and option positions of traders that hold positions above specific reporting levels set by CFTC regulations. Because a trader may carry futures positions through more than one FCM and because a customer may control more than one account, the Commission routinely collects information that enables its surveillance staff to aggregate information across FCMs and for related accounts.<sup>70</sup>

The CFTC devotes a significant portion of its annual budget and its personnel to market oversight. For Fiscal Year 2003, the CFTC requested a budget of \$10.6 million—about 13 percent of the agency's total budget—for its Market Surveillance, Analysis, and Research program within the Division of Economic Analysis. According to the CFTC's Budget Request for FY 2003, "The primary responsibility of the Market Surveillance, Analysis, and Research program is to foster markets that accurately reflect the forces of supply and demand for the underlying commodity and are free of disruptive activity. By detecting and protecting against price manipulation, this program assists the markets in performing the vital economic functions of price discovery and risk transfer (hedging)." Under the request, "57 FTE's will be employed to detect and prevent threats of price manipulation or other major market disruptions caused by abusive trading practices."<sup>71</sup>

<sup>69</sup> See, CFTC, *The CFTC's Large-Trader Reporting System*; available at CFTC website, at <http://www.cftc.gov/opa/backgrounder/opa-ltrs.htm>.

<sup>70</sup> Statement of James E. Newsome, Chairman, CFTC, Hearing before the Senate Committee on Energy and Natural Resources, *Enron Corporation's Collapse*, 107th Cong., 2nd Sess., January 29, 2002, at 27.

<sup>71</sup> For FY 2003, the CFTC requested \$22.9 million for the Division of Enforcement. Only a fraction of the enforcement budget is devoted to manipulation cases. In FY 2001, for example, the CFTC filed 3 administrative complaints in manipulation cases. During the same year, the CFTC filed 7 cases involving the sale of illegal foreign currency futures or options, 25 cases involving fraud, 4 cases involving management of customer funds, and various other administrative actions. The enforcement division also works with other law enforcement agencies on a variety of financial fraud, conspiracy, and money laundering actions. CFTC, *FY 2001 Annual Report*. A comparison of the CFTC's Budget Request with its Annual Report indicates that in the nor-

## 2. Market Oversight by Approved Futures Exchanges

In order for a commodity exchange to obtain CFTC approval to trade in futures contracts, the exchange must have its own market oversight and enforcement program to detect and prevent excessive speculation and market manipulation. Each of the “designated contract markets” authorized by the CFTC has established such a program, and works closely with the CFTC to prevent manipulation and other trading abuses.<sup>72</sup> The CFTC periodically reviews each of the approved exchanges’ market surveillance and enforcement programs to ensure they remain in compliance with the standards established by the CFTC.

The NYMEX, the largest exchange for energy contracts, describes its self-regulatory program as follows:

The New York Mercantile Exchange enforces a rigorous self-regulatory program closely monitoring and regulating floor trading activity to prevent market manipulation and other anti-competitive activity. The Exchange has taken the lead in developing and maintaining new trade surveillance enhancements including the addition of public representatives to a revamped disciplinary panel, increased penalties, and tightened recording procedures. During numerous hearings on the reauthorization of the CFTC, Exchange officials stressed the Exchange’s intolerance of wrongdoing, and encouraged legislation aimed at further preserving public confidence in the markets. The Exchange’s rules and procedures have been carefully honed as a result of nearly 125 years of experience in building one of the world’s safest and most liquid futures and options markets. The Exchange board of directors and staff remain committed to providing the vigilance and financial support necessary to preserve the highest levels of customer confidence in the integrity of our market.<sup>73</sup>

In 1998, the NYMEX Trade Practice Surveillance section, which investigates and prosecutes NYMEX rule violations, had a staff of 21 persons,<sup>74</sup> and the Market Surveillance section had a staff of 15.<sup>75</sup> The Chicago Mercantile Exchange (CME) had 10 full-time employees in its market surveillance division, which is responsible for monitoring and reviewing daily price movements, volumes and open interest in CME contracts, and other futures market activity.<sup>76</sup> It appears that the approved exchanges, in aggregate, devote a level of resources to surveillance and enforcement that is comparable to the level of resources that the CFTC devotes to these activities.<sup>77</sup> Altogether, then, on the order of a hundred individuals

mal course of business the CFTC devotes far more resources to the before-the-fact prevention of manipulation than to the after-the-fact prosecution of manipulation.

<sup>72</sup> See Table A.2-1 for a list of the designated contract markets currently in operation.

<sup>73</sup> NYMEX, *Safeguards and Standards*.

<sup>74</sup> CFTC, *Rule Enforcement Review of the Commodity Exchange, Inc. Division of the New York Mercantile Exchange* (1999).

<sup>75</sup> CFTC, *Rule Enforcement Review of the Market Surveillance Program at the COMEX Division of the New York Mercantile Exchange* (1998).

<sup>76</sup> CFTC, *Rule Enforcement Review of the Chicago Mercantile Exchange* (1999).

<sup>77</sup> The New York Board of Trade has a 21-person compliance division. CFTC, *Rule Enforcement Review of the New York Cotton Exchange* (2001).

in the government and on the designated exchanges monitor billions of dollars in commodity transactions each day.

The designated exchanges have several types of regulations and programs to ensure orderly trading and prevent manipulation. First, the exchanges impose a variety of financial requirements on firms that are members of the exchange to ensure the creditworthiness of the parties trading on the exchange. One of the major advantages of purchasing exchange-traded futures contracts rather than OTC derivatives or swaps for hedging or speculation is the much greater assurance of creditworthiness that the exchange-traded instruments provide. In an OTC transaction, each party assumes the credit risk of the other party. In a transaction conducted on an approved exchange, with a clearinghouse that is capitalized by its members, the clearinghouse effectively acts as the counterparty to all transactions and so eliminates counterparty credit risk. To ensure the financial integrity of the market, the exchanges require the maintenance of sufficient margins to cover market fluctuations, and require clearing member firms to maintain sufficient capitalization to cover their operations, including the trades made on behalf of their customers.

To ensure orderly trading, the exchanges have established daily price limits for most commodity futures contracts, which limit the amount the price of the contract can increase or decrease in 1 day; position limits for clearing members of the exchange to ensure each clearing member has sufficient capital to cover its commitments; position limits for customers on contracts for the current delivery month to prevent commodity squeezes in the final month of the contract; and reporting requirements for customers who acquire large positions in the futures or options markets.

Like the CFTC, the exchanges have market oversight programs to ensure that trading is orderly and in compliance with financial and trading regulations. As the NYMEX explains, “daily surveillance is performed to ensure that Exchange prices reflect cash market price movements, that the futures market converges with the cash market at contract expiration, and that there are no price distortions and no market manipulations.”<sup>78</sup> Generally, the exchanges hold weekly meetings to review market conditions. Market oversight meetings may be held more frequently if unusual market conditions warrant.

In sum, the day-to-day market oversight by the approved exchanges is one of the key elements in preventing manipulation in the commodity futures markets. The exchanges devote a level of resources to market oversight and enforcement that is comparable to the level of resources the CFTC devotes to these activities, and the exchanges work closely with the CFTC to monitor the markets and take action, when necessary, to ensure that trading remains orderly and in compliance with regulations. The CFTC and exchange anti-manipulation programs work together to detect, deter, and punish market manipulation.

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<sup>78</sup>*Safeguards and Standards.*

### C. Lessons Learned from the Sumitomo Manipulation of the Copper Markets

**Summary: The Sumitomo manipulation of the global copper market in the mid-1990's demonstrated the importance of monitoring over-the-counter markets and of sharing of information among regulators.**

#### 1. Sumitomo Manipulation of the Copper Markets<sup>79</sup>

Sumitomo is a Japanese corporation that has marketed copper metal for hundreds of years. During the time period relevant here, Sumitomo's Copper Metals Section, also known as Sumitomo's "Copper Team," was a major supplier of copper cathode to Asian manufacturers. Historically, Sumitomo extensively used the futures market to hedge against the risks presented by the volatility in copper prices.

Yasuo Hamanaka began trading in copper for Sumitomo in 1973, and was promoted to head the Copper Team in 1987. Just prior to Hamanaka's promotion, the Copper Team had begun to lose significant amounts of money from copper trades. These losses were compounded by losses incurred as a result of speculative trades made by Hamanaka and another trader in an attempt to compensate for the losses in the physical market. Hamanaka did not enter the losses from these trades on Sumitomo's normal bookkeeping system; rather he recorded the transactions in a personal notebook.

Shortly after he was promoted to head the Copper Team, Hamanaka began plotting to manipulate the copper market to recover some of Sumitomo's losses. Beginning in late 1993, Hamanaka entered into a series of unusual copper purchasing agreements with a newly-formed U.S. copper merchant firm, whereby both Sumitomo and the U.S. firm had an incentive for the transactions to be conducted at higher prices. According to the CFTC, much of the copper purchased by Sumitomo under these contracts was immediately resold to the U.S. firm's supplier and was never actually delivered to Sumitomo.<sup>80</sup>

As part of their scheme to manipulate the copper market, Hamanaka and his co-conspirators attempted to acquire all of the stocks of physical copper in the warehouses owned by the London Metals Exchange (LME). By November 1995, Sumitomo owned and controlled 100 percent of the copper inventory in LME warehouses, including the inventory in the newly opened LME warehouse in Long Beach, California. "As Sumitomo's copper trader knew, the concentration of ownership of all, or essentially all, of the LME warehouse stocks in the hands of cooperating market participants and the withholding of such stocks from the market would have the effect of increasing the price of copper and also creating a large backwardation. These developments allowed Sumitomo's copper trader to liquidate, lend or roll forward Sumitomo's large market

<sup>79</sup>The facts regarding Sumitomo's manipulation set forth herein are taken from the Offer of Settlement agreed to by the CFTC and Sumitomo Corporation in *In re Sumitomo Corporation*, 1998 CFTC LEXIS 96, Comm. Fut. L. Rep. (CCH) ¶27,327 (CFTC, May 11, 1998). The facts regarding the CFTC's response are taken from an article written by Brooksley Born, CFTC Chair at the time. Born, *International Regulatory Responses to Derivatives Crises: The Role of the U.S. Commodity Futures Trading Commission*, 21 NW. J. Intl. L. & Bus. 607 (2001).

<sup>80</sup>The *Sumitomo* settlement agreement did not name "the U.S. copper merchant" with which Sumitomo traded.

holdings at the higher price or price differential and thereby earn significant profits for Sumitomo.”<sup>81</sup> At the same time, Sumitomo had acquired and maintained large and controlling futures positions on the LME, which “bore little legitimate relationship to the marketing of physical copper to Sumitomo’s customers, but rather were specifically designed to cause artificial prices and price relationships.”<sup>82</sup>

In early 1995, the NYMEX and the CFTC became concerned about the price of copper on global markets, especially on the NYMEX and LME. Working with the NYMEX surveillance program, the CFTC surveillance staff recognized several unusual price relationships in the copper markets, such as increased volatility and the significant backwardation that had arisen due to Sumitomo’s extraordinarily large physical holdings. For example, the cash price of copper on the LME had risen from about \$1,900 per metric ton in June 1994, to about \$2,500 per ton by the end of September 1994.

In addition, the CFTC and NYMEX market oversight staffs “detected unusual activity in warehouse stocks.”<sup>83</sup> Although New York spot prices for copper were higher than the spot prices for copper on the LME in the summer and fall of 1995, inventories of copper in the LME warehouses—including the new LME warehouse in Long Beach—continued to increase. As the NYMEX explains, “Exchange officials and many members found this curious since exchange warehouses are intended to be the supplier or receiver of last resort. When demand for physical product is high, material should not continue to accumulate in an exchange warehouse; logically there should have been a reduction in LME stocks. . . .”<sup>84</sup> In late 1995, the NYMEX Vice-President called the LME warehouse inventories “a sign of sickness, not well-being,” and inconsistent with rational commercial activity.<sup>85</sup>

Although both the NYMEX and CFTC had spotted “unusual activity,” they could not discover the cause of such activity, and, as a result, were unable to take any preventive action to stop the manipulation. The NYMEX and CFTC examined the positions of traders on the NYMEX, but no unusual positions were detected. No large-trader reports had been filed.

Hamanaka and his co-conspirators had taken certain basic measures to evade NYMEX and CFTC oversight. They had acquired their futures and options positions on the LME and in the OTC markets rather than on the NYMEX in order to avoid the transparency and large-trader reporting requirements of the NYMEX and the CFTC. Indeed, Hamanaka “shunned the Comex [division

<sup>81</sup>*In re Sumitomo Corporation, supra*, at \*11–12. In the futures markets for commodities that can be stored easily, such as copper, the market is generally in contango rather than backwardation, as the producers or sellers of the commodity for future delivery will obtain a market premium to compensate them for the storage costs of the commodity to be delivered in the future. The crude oil markets are an exception to this general rule, as crude oil is more difficult to store than a metal such as copper or silver, and refiners are willing to pay a slight premium for the convenience of having an assured prompt supply of crude oil to keep their refineries in continuous operation. A large backwardation in the copper or silver market therefore indicates some type of immediate supply disruption or shortage.

<sup>82</sup>*Id.*, at 12.

<sup>83</sup>Born, *supra* at 622.

<sup>84</sup>NYMEX, *Collapse of Copper Prices Draws Attention to Differences in Oversight on the Exchange and Foreign Markets* (1996).

<sup>85</sup>*Id.*

of NYMEX], not only because it lacked the liquidity for the volume of trading he was doing, but also, he said in past interviews, because its regulations were too stringent.”<sup>86</sup>

The LME did not have comparable reporting requirements, and trading was much less transparent than on the American exchanges. On the LME, traders were “allowed to meet daily margin calls with credit, rather than cash, letting them amass large positions without attracting the attention of their corporate treasurers, who would otherwise have to cut them checks. The Comex requires cash.”<sup>87</sup>

After the Sumitomo manipulation was discovered, one NYMEX official blamed the LME’s lenient regulatory philosophy:

Unlike the strict reporting and disclosure requirements of the Exchange’s COMEX and NYMEX Divisions that give those markets their transparency, the corresponding rules on the LME are considerably more lax where they exist at all. The result is an opaque market where problems like Sumitomo’s have occurred with distressing regularity, including the tin market default in 1985 and a \$175 million loss suffered by the Chilean copper producer Codelco in 1993 because of alleged unauthorized trading.<sup>88</sup>

The CFTC requested information from the U.K. Securities Investment Board (SIB), but the SIB had neither the requested information nor the inclination to co-operate with the CFTC. Reflecting some of the attitudes in London, *The Guardian* reported, “The CFTC’s direct approach to investigating complaints lodged by its own members has been dubbed “colonialism” by some market participants in London.”<sup>89</sup> NYMEX appealed to the LME for information on the copper markets, but it too was “rebuffed.”<sup>90</sup> In response to the complaints that the LME was too weak as a regulator, the chief executive of the LME, David E. King, “insisted that charges that it lacks regulatory zeal are merely sour grapes from the [New York Exchange], which has lost most of its market share in copper to London in recent years.”<sup>91</sup>

According to Brooksley Born, CFTC Chair during this period, “the CFTC was frustrated in its ability to investigate the causes of the price abnormalities during 1995 because it was limited to information about the U.S. markets. At a time when Sumitomo’s manipulative scheme might have been stopped before great harm was caused to copper market participants, the CFTC’s hands were tied by lack of information.”<sup>92</sup>

In the absence of specific information about trading in the copper markets, the CFTC was unable to detect or stop Hamanaka’s manipulation. In April 1996, following a series of letters from the

<sup>86</sup> Stephanie Strom, *A Market Ripe for Manipulation; Laxity in London Opened Door for a Sumitomo Trader*, *New York Times*, July 12, 1996.

<sup>87</sup> *Id.*

<sup>88</sup> *Id.* In Chile, the losses at Codelco grew into a political scandal dubbed “Coppergate,” and contributed to the fall of the Chilean government. Garth Alexander and John Waples, *Copper Meltdown*, *Sunday Times*, June 16, 1996.

<sup>89</sup> Paul Murphy, *Complaints About American Regulators’ London Activity*, *The Guardian* (London), January 30, 1996.

<sup>90</sup> Strom, *A Market Ripe for Manipulation; Laxity in London Opened Door for a Sumitomo Trader*, *supra*.

<sup>91</sup> *Id.*

<sup>92</sup> Born, *supra* at 622.

CFTC to the LME regarding the unusual activity in the copper markets, Sumitomo began its own investigation.<sup>93</sup> When during this internal investigation a Sumitomo clerk discovered a variety of unauthorized accounts at Merrill Lynch and other small brokerages, Sumitomo reassigned Hamanaka, who confessed to the manipulation scheme shortly afterward. At this time, however, Hamanaka had yet to unwind his futures and cash positions at the high market prices he had created. Sumitomo also informed the CFTC of the losses Sumitomo had incurred over the years as a result of Hamanaka's trading—at the time it estimated those losses at \$1.8 billion. It later revised the estimate to \$2.6 billion. Following Hamanaka's reassignment and subsequent dismissal, copper prices dropped nearly 30 percent—from \$2,800 per metric ton to below \$2,000 per metric ton.

Once Hamanaka's activities were disclosed, the CFTC again requested information from the SIB regarding Sumitomo's positions on the LME and the positions of U.S. affiliates on the London exchange as well. According to former Chair Born, "The SIB now recognized the seriousness of the situation and became more responsive to the CFTC's information requests. Nonetheless, there still remained some confusion and disagreement about what information was relevant for regulatory purposes and what information might be competitively sensitive."<sup>94</sup> The CFTC's subsequent investigation revealed that Hamanaka had not only used the cash market for copper and the LME to achieve his price manipulation, but had "also used OTC transactions in furtherance of its manipulative scheme, both to obtain financing and to disguise the speculative nature of its transactions."<sup>95</sup>

Because Sumitomo had sufficient assets to cover the entire \$2.6 billion loss, Sumitomo did not default on its obligations and its losses did not trigger a chain-reaction of defaults or require a takeover or bail-out. Nonetheless, according to the former CFTC Chair, "the impact of Sumitomo's activities on world copper prices did have a profound economic impact both within the United States and abroad. As the CFTC investigation revealed, Sumitomo manipulated the price of copper in what may well have been the most significant commodity price manipulation since the Hunt brothers' manipulation of the world market in silver in 1979 and 1980."<sup>96</sup> One metals trader estimated that Hamanaka's manipulation artificially raised the price of copper an average of 5 cents per pound on the spot market for 5 years, during which time copper was trading between 73 cents and \$1.46 per pound.<sup>97</sup> This cost would have been passed on to copper processors and manufacturers of copper products, and ultimately, consumers.<sup>98</sup>

<sup>93</sup> Suzanne McGee and Stephen E. Frank, *Metal Detection: Sumitomo Debacle is Tied to Lax Controls by Firm, Regulators*, Wall St. J., June 17, 1996. See also Kozinn, *supra* at 270–77.

<sup>94</sup> Born, *supra* at 623. In requesting information from the SIB, the CFTC invoked the "Boca Declaration," which had just been signed in March 1996. The Boca Declaration, which was prompted by the collapse of the Barings Bank due to unauthorized trading in derivatives by one of its young employees, pledged the signatories to share information in the event of a significant financial reversal by a member of an exchange or clearing organization.

<sup>95</sup> *Id.*

<sup>96</sup> *Id.*

<sup>97</sup> Strom, *A Market Ripe for Manipulation; Laxity in London Opened Door for a Sumitomo Trader*, *supra*.

<sup>98</sup> Some sophisticated market players, such as George Soros, detected that copper prices were unusually high during Hamanaka's manipulations and sold short large quantities of copper.

Sumitomo acknowledged the activities of Hamanaka, but claimed it had no knowledge of those activities at the time, and stated that such activities were unauthorized. Sumitomo settled with the CFTC by agreeing to cease and desist from further violations of the anti-manipulation provisions of the CEA, paying a \$125 million civil penalty, and establishing a \$25 million escrow fund to pay restitution to persons injured by Sumitomo's manipulative conduct. At the time, the civil penalty imposed upon Sumitomo was the largest civil penalty ever imposed by the U.S. Government. In Japan, Hamanaka was found guilty of forgery and fraud, and sentenced to 8 years in prison.

Subsequently, the CFTC found that Merrill Lynch had "aided and abetted" Sumitomo by providing more than \$500 million of credit to Sumitomo, which Sumitomo used to purchase copper on the cash market and LME futures contracts. The director of the CFTC's enforcement division stated the case was "one of the most serious world-wide manipulations of a commodities market encountered in the 25-year history of the commission."<sup>99</sup> The CFTC complaint charged "Merrill Lynch participated in the manipulation as something it wished to bring about because Merrill Lynch earned money as copper prices rose."<sup>100</sup> It further alleged that Merrill Lynch officials "had correctly concluded that Global and Sumitomo's warrant-taking operation was motivated by their intention to manipulate prices and spread, not by genuine commercial need, and that Global and Sumitomo were attempting to manipulate, and were successfully manipulating the world's copper markets." Although Merrill Lynch initially denied any wrongdoing, it settled the CFTC's suit by agreeing to a cease and desist order and paying a civil monetary penalty of \$15 million.

In 1999, Sumitomo filed suit against J.P. Morgan Chase for its role in facilitating Hamanaka's manipulative scheme. According to papers filed by Sumitomo in the lawsuit, J.P. Morgan and its Morgan Guaranty Trust subsidiary sold "esoteric" derivatives to Sumitomo which, in reality, were no more than disguised loans. Sumitomo claimed that J.P. Morgan officials knew that Hamanaka was engaged in an illegal trading scheme, but nonetheless provided him with \$735 million in credit so they could earn substantial fees and commissions.<sup>101</sup> In 2002, J.P. Morgan Chase agreed to pay \$125 million to Sumitomo to settle the suit.<sup>102</sup>

A U.S. metals trading firm alleged to have conspired with Sumitomo to manipulate copper prices, Global Minerals & Metals Corp., has contested the CFTC's charge of manipulation. The CFTC's enforcement proceedings against this company and several of its employees are on-going, but have been delayed by acrimonious pre-hearing disputes. In a ruling earlier this year, a CFTC administrative law judge stated, "From the outset, this matter has

Such speculative short selling drove even more buying by Hamanaka to prop prices up. Eventually, even Soros declined to continue to trade against Hamanaka. Paul Krugman, *How Copper Came a Cropper*, *The Dismal Science*, July 19, 1996.

<sup>99</sup> Charles Gasparino, *CFTC Charges Merrill Lynch in Sumitomo Copper Scandal*, *Wall Street Journal*, May 21, 1999.

<sup>100</sup> *Id.*

<sup>101</sup> Bank & Lender Liability Litigation Reporter, *J.P. Morgan Granted Relief in Sumitomo Case; Chase Not so Fortunate*, November 30, 2000.

<sup>102</sup> Bayan Rahman, *J.P. Morgan Chase, Sumitomo Settle in Copper Scandal*, *National Post* (f/k/a *The Financial Post*), April 2, 2002.

been mired in pleading, document production, and professional misconduct disputes. To date, this case has generated a total of 13 CCH-reported opinions and orders (this will be the 14th), without a hearing on the merits of the Commission's complaint in sight."<sup>103</sup> With respect to the merits, the judge opined, "[T]his proceeding raises a host of highly complex and interesting issues of law, economics and quantitative analysis for our consideration."<sup>104</sup>

The *Sumitomo* case demonstrates that even in a manipulation case in which the principal participant has admitted guilt and is serving an 8-year prison sentence for fraud and forgery, the responsible corporation in the manipulative scheme has admitted liability and paid \$150 million in penalties, and two of the investment firms that financed the scheme have paid an equivalent amount, many obstacles impede proving, under current case law, that alleged conspirators in the scheme manipulated the market.

## 2. International Agreement to Address Problems Raised by Sumitomo

In the wake of the Sumitomo manipulation, regulators from the three nations whose markets were principally affected by the affair—the United States, United Kingdom, and Japan—recognized the existing international understandings and framework for obtaining and sharing information on commodity trading were inadequate. Hamanaka had managed to evade detection for as long as he did by operating in the London and OTC markets, where there was much less transparency than on the regulated U.S. exchanges. In addition, by using a mix of international markets, he ensured that none of the various market authorities with jurisdiction over Hamanaka's trading activity was able to obtain a complete or accurate view of their own markets or his activities. Following the incident, CFTC Chair Born wrote, "The Sumitomo incident had confirmed that information sharing may be important to market oversight and regulation even before any enforcement actions are envisioned and that the information needed may involve the state of the market as a whole as well as the situation of particular market participants."<sup>105</sup>

The U.S., U.K., and Japanese regulators convened a meeting of international commodity market regulators in London in November 1996, to begin to develop a new international agreement for the sharing of market information. "The co-sponsors believed that Sumitomo's manipulation of the copper markets demonstrated that derivatives markets in international commodities involving physical delivery, such as copper, posed special regulatory issues and concerns, especially relating to the availability of deliverable supplies and susceptibility to market manipulation."<sup>106</sup>

The London meeting resulted in the issuance of the London Communiqué on Supervision of Commodity Futures Markets, which sought to address the international regulatory issues raised by the Sumitomo manipulation. The London Communiqué "recognized

<sup>103</sup> *In re Global Minerals & Metals Corp. et. al.*, 2002 CFTC LEXIS 12, at \*5, Comm. Fut. L. Rep. (CCH) ¶ 28,916 (January 23, 2002).

<sup>104</sup> *Id.* at 2.

<sup>105</sup> Born, *supra* at 625.

<sup>106</sup> Born, *supra* at 626.

that futures contracts based on an underlying physical commodity—and particularly those requiring physical delivery—pose particular concerns for market integrity and the supervision of such markets.”<sup>107</sup> In issuing the Communique, the regulators specifically agreed that better contract design, more effective market oversight, and regulatory measures designed to provide regulators with information on large positions in cash and OTC markets should be adopted.

Specifically, the London Communique stated the following with respect to physical commodity markets:

- Proper contract design is critical to reducing the susceptibility of such contracts to market abuses, including manipulation, and is an important complement to an appropriate market surveillance program.
- An effective market surveillance program by the market regulatory authorities is essential to ensure that commodity futures markets operate in a fair and orderly manner; and should be designed to detect, to prevent, to take corrective action with respect to, and to punish abusive conduct and should be supported by appropriate regulatory measures.
- Market authorities should have access to necessary information.
- Market authorities of related markets should share surveillance information in order to manage market disruption.
- Regulatory measures which facilitate the identification of large exposures should be developed. These measures may involve access to information relating to the persons holding or controlling large exposures and their related derivatives, over-the counter and cash market positions. These measures may also involve access to information on deliveries.

Following the issuance of the London Communique, international regulators continued to work to develop appropriate standards of best practice and guidelines for the design of contracts and market oversight programs. In October 1997, the regulators met again, this time in Tokyo, Japan. This international meeting resulted in the issuance of the Tokyo Communique on Supervision of Commodity Futures Markets, which contained Guidance on Standards of Best Practice for the Design and/or Review of Commodity Contracts; and Guidance on Components of Market Surveillance and Information Sharing (“Market Surveillance Guidance”).

The Market Surveillance Guidance recommends that regulators routinely collect and analyze information regarding cash and OTC markets related to regulated futures markets. The Guidance states:

- Each commodity futures market and other market authorities should have a clear framework for conducting market surveillance, compliance and enforcement activities and there should be oversight of those activities.
- Information should be collected on a routine and non-routine basis for on-exchange and related cash and over-the-counter

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<sup>107</sup> *Id.*

“OTC”) markets and should be designed to assess whether the market is functioning properly. Market authorities should have access to information that permits them to identify concentrations of positions and the composition of the market. It is acknowledged that data on related cash and OTC markets may be less immediately available than data for exchange markets. This may be an area which requires governmental powers.

The Market Surveillance Guidance also stated that the collection and analysis of market information should occur “speedily”; effective emergency powers should be available to intervene in the market to prevent or to address abusive practices or disorderly conditions; effective power should be available to discipline market members; the relevant authority should have the power to address abusive actions by non-members; and market authorities should cooperate to share information, particularly on large exposures.

The 17 nations that participated in the Tokyo conference also recommended the removal of domestic legal barriers to the implementation of these recommendations:

Furthermore, in view of the fact that information is a critical tool for maintaining fair and orderly markets and ensuring market integrity in non-financial physical delivery markets with finite supply, that market authorities should seek the removal of domestic legal or other barriers to ensure, consistent with the regulatory framework of each jurisdiction, access by market authorities to information that permits them to detect and to deter abusive practices and disorderly conditions in the markets, including access to information that permits them to identify concentrations of positions and the overall composition of the market.

Former CFTC Chair Born summarized the significance of the Tokyo Communique as follows:

The Guidances provide for the first time useful international benchmarks for the supervision of commodity derivatives markets and underscore the importance of detecting and deterring manipulative activities such as those engaged in by Sumitomo. The consensus on the need for information concerning large positions on exchange markets and related cash and OTC markets was a significant step forward in enhancing the international standards of regulation of these markets, particularly in light of the participants’ commitment to work to alter their domestic laws in order to implement the provision. Furthermore, the recognition of the importance of sharing such information as part of an international effort to detect broad-based manipulation efforts in their incipency represents substantial progress toward protecting the integrity of the global marketplace.<sup>108</sup>

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<sup>108</sup>Born, *supra* at 630.

Despite the commitments it made in the 1997 Tokyo Communique, the United States has failed to increase its oversight of or collection of information related to large positions on OTC markets. To the contrary, as explained in Appendix 2, in 2000, Congress enacted the Commodity Futures Modernization Act (CFMA), which extended the unregulated status of OTC markets for energy, metals, and financial derivatives. Economic damage to U.S. consumers, business, and the California and U.S. economies from fraud and possible price manipulation in U.S. energy markets have renewed calls for increased government oversight of energy contracts, swaps, and derivatives. Legislation has been introduced, but not yet enacted into law, to eliminate a number of the exclusions and exemptions for energy contracts from the CEA that now limit the Federal Government's ability to detect, deter, and punish manipulation in U.S. energy markets.



## APPENDIX 2

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### HISTORY AND CURRENT STATUS OF COMMODITY MARKET REGULATION

In the United States, the Commodity Exchange Act (CEA) is the primary Federal statute governing the purchase and sale of contracts for the future delivery of crude oil. Section I of this Appendix describes the legislative history and major provisions of the CEA as it relates to the trading of contracts for future delivery of crude oil. Section II describes the recent exclusions and exemptions for energy and crude oil contracts that are traded “over-the-counter.”

#### I. LEGISLATIVE HISTORY OF THE COMMODITY EXCHANGE ACT

*“[The CFTC] chairman, William Bagley, was fond of reminding people that the CFTC had fewer ‘policemen’ than the Rockville, Maryland, Police Department—and this to monitor the commodity exchanges that are among the world’s most complex economic institutions.”*

*—Dan Morgan, Merchants of Grain (1980)*

**Summary: A fundamental purpose of the regulation of the commodities futures markets is to prevent manipulation.**

#### A. Background on Commodities Exchanges and Need for Regulation

In 1848, as the industrial revolution was helping transform the American Midwest into productive farmland, 82 merchants founded the Chicago Board of Trade (CBOT) to be a central marketplace for producers, buyers, and sellers in the expanding grain trade. In 1865, the CBOT developed futures contracts for trading on the exchange. These standardized contracts, which provided for delivery of a standardized quantity of grain, at a specific location, on a fixed date in the future, at an agreed-upon price, afforded farmers with the price certainty and stability that enabled them to commit resources to the planting of wheat without knowing the specific prices the wheat would eventually obtain on the spot market. Similarly, these futures contracts allowed grain traders, processors, and merchandisers to protect themselves or “hedge” against price volatility while transporting, storing, and processing the grains. The trading of futures contracts attracted speculators who were willing to absorb some of these price risks in exchange for speculative gains, bringing “liquidity” to the market. This market innovation enabled American farmers and merchants to join in the mush-

rooming international trade in grains in the latter part of the 19th Century.

Hundreds of other agricultural exchanges soon sprouted across the country to participate in the domestic and international markets. In 1872 in New York, a group of dairy merchants organized the “Butter and Cheese Exchange of New York,” which also began trading in futures. The New York exchange soon grew to become the “Butter, Cheese and Egg Exchange,” and, in 1882, to reflect the inclusion trade of poultry, groceries, dried fruits, and other produce, became simply “the New York Mercantile Exchange.”

Over time, most of the smaller exchanges could not compete with the large exchanges in New York and Chicago, and have either folded or been consolidated into the major exchanges. The last major consolidation occurred in 1994, when the New York Mercantile Exchange merged with the Commodity Exchange (COMEX), which trades in items such as gold, copper, hides, rubber, silk, silver, and tin. A list of commodity exchanges in operation today is provided in Table A.2–1.<sup>1</sup>

**Table A.2-1**  
**Designated Contract Markets (Active)**

Exchange	Major Commodities	Comments
New York Mercantile Exchange (NYMEX)	Energy products	Founded in 1872 as the Butter and Cheese Exchange of New York.
The COMEX Division (COMEX)	Metals	Founded in 1933 from the merger of the National Metal Exchange, the Rubber Exchange of New York, the National Raw Silk Exchange, and the New York Hide Exchange. Since 1994 a subsidiary of NYMEX.
Chicago Board of Trade (CBOT)	Grains, U.S. Treasury notes and bonds, interest rates, and stock indexes	First exchange, established in 1848; began futures trading for agricultural commodities in 1865.
MidAmerica Exchange (MIDAM)	Soybeans, wheat, and corn	Subsidiary of CBOT; trades in same contracts as CBOT, but in smaller sizes.
Chicago Mercantile Exchange (CME)	Livestock, dairy products, stock indexes, interest rates, Eurodollars and other currencies	Originally formed in 1898 as the Chicago Butter and Egg Board; became the CME in 1919.
Kansas City Board of Trade (KCBT)	Wheat, natural gas, and stock indexes	Established in 1856; began futures trading for grains in 1876.
Minneapolis Grain Exchange (MGE)	Spring wheat	Established in 1881 by Minneapolis Chamber of Commerce to prevent abuses.
New York Board of Trade (NYBOT)	Coffee, cocoa, sugar, frozen concentrated orange juice, cotton, currencies, and stock indexes.	Formed in 1998 by merger of CSCE and NYCE.
Coffee, Sugar & Cocoa Exchange (CSCE)	Coffee, sugar, and cocoa	Part of NYBOT
New York Cotton Exchange (NYCE)	Cotton and frozen concentrated orange juice.	Part of NYBOT.
Merchants' Exchange (ME)	Barge freight rates and energy products	Established in 1836 as a cash exchange; in 2000 it became the ME and is now an electronic exchange.
BrokerTec Futures Exchange (BTEx)	Government Securities	Electronic trading platform.
Cantor Financial Futures Exchange (CX)	US Treasury and Agency notes	Proprietary electronic trading platform; joint venture between NY Board of Trade & Cantor Fitzgerald.
New York Futures Exchange (NYFE)	Currencies and stock indexes	Owned by NYCE.

<sup>1</sup> CFTC website, at <http://www.cftc.gov/dea/deadcms—table.htm>.

In the late 19th Century, the commodities markets were self-regulated and rife with manipulation. To many, the commodities markets did not reflect natural forces of supply and demand or perform a valuable economic function, but rather were corrupt institutions that enabled unscrupulous speculators to control the price of basic commodities. “[T]he frequent picture of commodity exchanges was one of unbridled speculation, recurrent market manipulations, and spectacular price fluctuations. Indeed, it was a serious question with many whether the economic services of the system in the 1870’s and 1880’s were not outweighed by speculative excesses and abuses of the system.”<sup>2</sup> The “shenanigans that took place year in and year out at the Chicago Board of Trade” fed into the populist resentment against the trusts, banks, and other large corporate interests toward the end of the century:

The Board of Trade, which was created in 1848 at the instigation of Chicago’s merchants, soon became a sort of international symbol of the worst elements of American free enterprise: greed; the cycle of riches and ruin, boom and bust; corruption. There was an orgy of speculation and market manipulation during the Civil War. The Board printed rules governing trading in 1869, but abuses of all kinds continued—fraud, bribery of telegraph operators to obtain confidential information (until coded messages were used), and the spreading of false rumors to influence prices. Outside the trading floor at Jackson and La Salle streets, bucket shops, not much different from bookie joints or other gambling establishments, flourished.<sup>3</sup>

Most attempts at cornering the market did not succeed, mainly because the markets were too large. “Memoirs of the markets are full of stories about attempted corners, and they usually have two things in common: greed and failure.”<sup>4</sup> “Squeezes made some rich, and bankrupted others. The more severe episodes placed enormous strains on the nation’s financial system. . . . Indeed, the gold corner shook the administration of Ulysses S. Grant (who was indirectly linked to the scheme) to its core and largely foreshadowed its litany of scandal.”<sup>5</sup> The rampant corruption and manipulations undermined confidence in the futures markets. “The irresponsible trading and lack of effective market regulation in the early period stirred farm resentment and opposition to futures trading that still exist to a limited extent.”<sup>6</sup>

## **B. The Commodity Exchange Act**

### **1. Grain Futures Act of 1922**

“The abuses of futures trading in this early period resulted in repeated efforts of various State legislatures, from the late 1860’s on-

<sup>2</sup>Report of the Senate Committee on Agriculture, Nutrition, and Forestry, to accompany S. 2019, Futures Trading Act of 1982, S. Rept. 97–384, 97th Cong., 2nd Sess. 11 (1982).

<sup>3</sup>Dan Morgan, *Merchants of Grain*, at 95 (Penguin, 1980).

<sup>4</sup>Stephen Fay, *Beyond Greed*, at 60 (1982).

<sup>5</sup>Steven Craig Pirrong, *The Economics, Law, and Public Policy of Market Power Manipulation* 2 (1996).

<sup>6</sup>S. Rept. 97–384, *supra* at 11.

ward, to abolish futures trading.”<sup>7</sup> In 1892–93 both houses of Congress passed bills that would have imposed a prohibitive tax on futures trading; final legislation was narrowly defeated on a procedural motion.<sup>8</sup> As farm prices rose and stabilized in the ensuing years, however, legislative efforts focused on regulation of the markets rather than their abolition.

It was not until grain prices collapsed after the First World War that Federal legislation was passed to regulate the futures markets. During the First World War, the disruption of European grain production and markets drove up prices for American grain, providing handsome profits for entrepreneurial merchants and speculators. After the War ended, the high levels of production in the United States and the resumption of grain production in Europe caused wheat prices to plummet. At the same time, the overall U.S. economy had fallen into a depression. American farmers blamed their post-war plight on the excesses of the speculators, particularly the short sellers, whose speculative selling, they believed, had driven down the price of grains.<sup>9</sup> At Congressional hearings, farm witnesses “attacked speculators as ‘predatory parasites,’ thieves, gamblers, and wealthy individuals who ‘live like lords and ride in high-powered automobiles and live in great residences.’”<sup>10</sup> The farmers clamored for either outright abolition of the trading of futures or, at the very least, stringent linkages between contracts for futures and the physical market.<sup>11</sup>

Largely as a result of the agitation from the farmers, in 1922, the Congress passed the Grain Futures Act to prevent excessive speculation and manipulation.<sup>12</sup> Congress set forth in the statute itself the purpose of the futures markets—for hedging, price discovery, and price dissemination; the importance of these markets to the national and international commerce; and the public interest in preventing excessive speculation and manipulation:

The prices involved in such transactions are generally quoted and disseminated throughout the United States and in foreign countries as a basis for determining the prices to the producer and the consumer of commodities and the products and byproducts thereof and to facilitate the movements thereof in interstate commerce. Such transactions are utilized by shippers, dealers, millers, and others engaged in handling commodities and the products and byproducts thereof in interstate commerce as a means of hedging themselves against possible loss through fluctuations in price. The transactions and prices of commod-

<sup>7</sup>S. Rept. 97–384, *supra* at 11; Dan Morgan, *Merchants of Grain*, at 97 (Penguin, 1980).

<sup>8</sup>S. Rept. 97–384, *supra* at 11.

<sup>9</sup>See Romano, *The Political Dynamics of Derivative Securities Regulation*, 14 Yale J. on Reg. 279, 287 (1997).

<sup>10</sup>*Id.* at 292.

<sup>11</sup>*Id.*, at 291–294.

<sup>12</sup>The Future Trading Act, 42 Stat. 187 (1921), imposed a tax on all grain futures contracts that were not traded on a designated contract market. In *Hill v. Wallace*, 269 U.S. 44, 42 S.Ct. 453, 66 L.Ed. 822 (1922), the Supreme Court held this Act to be an unconstitutional violation of the taxing power. To remedy this constitutional defect, the next year the Congress passed the Grain Futures Act, 42 Stat. 998 (1922), with virtually the same provisions as the overturned law, but without the offending tax provision. The Grain Futures Act simply made it illegal to trade in futures contracts off a designated contract market. The Supreme Court upheld the Grain Futures Act as a constitutional exercise of the power to regulate interstate commerce in *Board of Trade v. Olsen*, 262 U.S. 1, 43 S.Ct. 479, 67 L.Ed. 839 (1923).

ities on such boards of trade are susceptible to excessive speculation and can be manipulated, controlled, cornered or squeezed to the detriment of the producer or the consumer and the persons handling commodities and the products and byproducts thereof in interstate commerce, rendering regulation imperative for the protection of such commerce and the national public interest therein.<sup>13</sup>

The 1922 Act established much of the framework for the regulation of the commodities exchanges in effect today. The Act required all grain futures contracts to be traded on a designated contract market,<sup>14</sup> and authorized the Secretary of Agriculture to designate a board of trade as a “contract market” if the board satisfied a number of conditions set forth in the statute. Among these conditions were for the board of trade to require members of the exchange to keep records of their transactions, to prevent “false or misleading or knowingly inaccurate reports concerning crop or market information,” and to prevent the “manipulation of prices and the cornering of any commodity.”<sup>15</sup> The Act provided the government—a commission made up of the Secretary of Agriculture, the Secretary of Commerce, and the Attorney General—with the authority to revoke the designation of any board that failed to comply with the conditions of its designation as a contract market.

## 2. Commodity Exchange Act

In 1936, Congress enacted the Commodity Exchange Act (CEA) to rename and expand the scope of the original Grain Futures Act to include not only grain but various other commodities, including cotton, butter, and eggs.<sup>16</sup> The exchanges that traded these commodities opposed the regulation of their markets as unnecessary, and, in what became a typical objection to the various proposed expansions of the markets regulated by the CEA, predicted dire consequences if these markets were regulated. Experience, however, proved such fears to be unfounded.

Congress also strengthened the anti-manipulation provisions of the Act. In response to the 1936 Supreme Court decision in *Wallace v. Cutten*<sup>17</sup>, in which the Court held the Grain Futures Act did not permit after-the-fact criminal prosecutions for violations of the anti-manipulation provisions, Congress made manipulation a misdemeanor punishable by a fine of \$10,000 and imprisonment of up to 1 year.<sup>18</sup>

<sup>13</sup> 7 U.S.C.A. § 5 (1999).

<sup>14</sup> In making off-exchange transactions in futures illegal, Congress intended to stop the “bucketing” of orders in “bucket shops.” A “bucket shop” would take a customer order for a futures transaction but not place the order on the exchange; as the counter-party to the customer’s transaction the bucket shop would attempt to profit from price movements adverse to the customer. Bucket shops also would offset orders from customers with opposing positions against each other, thereby short-circuiting the open outcry price discovery mechanism of the exchange. Both practices exposed the customers to additional costs and risks of default. See, e.g., Markham, *supra* at n139 and accompanying text.

<sup>15</sup> 7 U.S.C.A. § 7 (1999).

<sup>16</sup> 49 Stat. 1491 (1936).

<sup>17</sup> 298 U.S. 229 (1936).

<sup>18</sup> 49 Stat. 1498, 1499 (1936).

### **Butter & Eggs and Cotton Exchanges Opposed Regulation under the CEA**

Although farmers and dairy producers supported the regulation of butter and egg futures, the butter and egg exchanges opposed it. Romano, *supra*. The President of the Chicago Mercantile Exchange testified the legislation was not needed to “insure the free flow of butter and eggs from the farm to the table of the consumer.” The President of the New York Mercantile Exchange predicted the bill would “undoubtedly curtail trading in futures to such an extent that future boards on commodity exchanges handling butter and eggs will practically become useless.” The exchanges requested further study before legislation was enacted. Hearings before the Senate Committee on Agriculture and Forestry, *To Amend the Grain Futures Act*, 74th Cong., 2nd Sess., April 21, 22, and 23 (1936).

Phelan Beale, General Counsel for the Cotton Exchange, testified “it would be a grievous error to include cotton in a bill that primarily was drawn to apply to grain.” He asked the Committee to further study the issue so that “through no inadvertence nor sins of omission or commission may the greatest commodity in the United States and the greatest export of the United States be impaired.” Hearings before the House Committee on Agriculture, *Regulation of Commodity Exchanges*, 74th Cong., 1st Sess., 45–46, February 5, 7, and 8, 1935.

The Congress also added an anti-fraud provision, which to this date has remained essentially unchanged.<sup>19</sup>

#### **The CEA Anti-Fraud Provision**

Section 4b of the CEA makes it unlawful for any person, in connection with the sale of or order for any contract for future delivery that is used for hedging, price discovery, or actual delivery of such commodity, to: (i) cheat or defraud, or attempt to cheat or defraud, another person; (ii) willfully make any false statement to another person or create a false record; (iii) willfully deceive or attempt to deceive another person; or (iv) to bucket any such orders, offset such orders against orders of other persons, or willfully and knowingly become the buyer or seller of sell or buy orders without the consent of the other party.

### **3. 1968 Amendments**

In 1968, Congress again expanded the Act and strengthened the anti-manipulation and anti-fraud provisions.<sup>20</sup> The 1968 amendments brought several additional commodities, such as live cattle and pork bellies, within the scope of the Act. It empowered the Secretary of Agriculture to disapprove rules adopted by a contract market that would violate the Act or the regulations established thereunder, and also required the contract markets to enforce all

<sup>19</sup> 7 U.S.C.A. § 6b (1999).

<sup>20</sup> 82 Stat. 26 (1968).

of its rules that were not disapproved by the Secretary of Agriculture. The amendments made a violation of the anti-manipulation and anti-fraud provisions a felony rather than a misdemeanor, with a maximum prison term of 5 years.

#### **4. 1974 Amendments: Creation of CFTC**

Initially, jurisdiction over the commodities markets was provided to the Department of Agriculture because the commodities markets were centered around a limited number of agricultural products. By the 1970's, a number of futures markets in other products had developed, such as coffee, sugar, cocoa, lumber, and plywood, plus various metals, including the volatile silver market, and foreign currencies. In 1974, Congress concluded the need to regulate these commodity markets was no less than the need to regulate the agricultural markets already within the Act:

A person trading in one of the then unregulated futures markets needed the same protection afforded to those trading in the regulated markets. Whether a commodity was grown, mined, or created, or whether it was produced in the United States or outside the United States made little difference to those in this country who bought, sold, processed, or used the commodity, or to the United States consumers whose prices were affected by the futures market in that commodity.<sup>21</sup>

Accordingly, Congress overhauled the CEA and expanded its coverage to include a broad range of futures contracts, not just the agricultural commodities already specified in the statute.<sup>22</sup>

#### **Coffee & Sugar and Cocoa Exchanges and Silver Companies Opposed Regulation Under the CEA**

The New York Coffee and Sugar Exchange and the New York Cocoa Exchange (both are now part of the New York Board of Trade) opposed the regulation of their markets. One representative testified these exchanges were “more than adequately regulated” under their own rules and the “good sound judgment” of their officers and governing boards. He perceived “no reason” for regulation under the CEA. The exchanges predicted that regulation would drive these futures markets overseas, causing the United States and the City of New York “to lose substantial employment opportunities and taxable revenues,” and “would increase the volatility of commodity prices passed on to consumers in the United States.” *Commodity Futures Trading Commission Act*, Hearings before the Senate Committee on Ag-

<sup>21</sup>S. Rept. 97-384, *supra* at 13.

<sup>22</sup>The commodities listed in the statute are wheat, cotton, rice, corn, oats, barley, rye, flaxseed, grain sorghums, mill feeds, butter, eggs, *Solanum tuberosum* (Irish potatoes), wool, wool tops, fats and oils (including lard, tallow, cottonseed oil, peanut oil, soybean oil, and all other fats and oils), cottonseed meal, cottonseed, peanuts, soybeans, soybean meal, livestock, livestock products, and frozen concentrated orange juice. 7 U.S.C.A. § 1a(4) (West Supp. 2002). In 1958, as a result of the numerous manipulations of the onion market, the Congress prohibited all futures in onions. Pub. L. 85-839, § 1, Aug. 28, 1958, 72 Stat. 1013; 7 U.S.C.A. § 13-1 (West 1999). See Markham, *supra* at 318 (“Perhaps the most manipulated market of all was onions.”).

riculture and Forestry, 93rd Cong., 2nd Sess, Pt. 2, 464, 465 (1974).

Today, the New York Board of Trade states it is “the world’s premier futures and options markets” for cocoa, coffee, cotton, frozen concentrated orange juice, and sugar. New York Board of Trade, *Agricultural Futures & Options*.

Several companies trading in silver opposed the regulation of futures contracts for silver. Even as the Hunt brothers were active in the silver market, the Chairman of Mocatta Metals, the largest U.S. silver bullion dealer, testified there were “no major scandals or improprieties affecting trading on the major international commodity exchanges necessitating emergency amelioration,” and urged more study of the issue. Mocatta predicted full CFTC regulation “could upset the markets for international commodities and materially reduce the vitality of U.S. participation in those markets, thereby causing those commodities to flow away from our shores and to be most costly to acquire for consumption in the U.S.” 1974 Senate Hearings, *supra*, at Part. 3, 797 (Statement of Dr. Henry G. Jarecki).

The 1974 Amendments expanded the Act to include “all other goods and articles . . . and all services, rights, and interests in which contracts for future delivery are presently or in the future dealt in.”

In expanding the scope of the Act, Congress reiterated the purpose of the Act to prevent fraud, manipulation, and control speculation in the commodity markets:

The fundamental purpose of the Commodity Exchange Act is to ensure fair practice and honest dealing on the commodity exchange and to provide a measure of control over those forms of speculative activity which too often demoralize markets to the injury of producers and consumers and the exchanges themselves.<sup>23</sup>

The legislation transferred the authority of the Secretary of Agriculture to the new Commodity Futures Trading Commission (CFTC), an independent five-member regulatory agency. The 1974 Amendments increased the maximum fine for a violation of the anti-manipulation prohibition from \$10,000 to \$100,000.<sup>24</sup>

Congress also clarified that this expansion of CEA coverage did not extend to certain financial transactions. During the debate over the 1974 amendments, the Treasury Department had expressed concern that the proposed language to broaden the Act could be read to encompass the existing trade in currency futures between large banks and other sophisticated institutions. Congress responded by enacting the “Treasury Amendment,” which exempted from the Act “transactions in foreign currency, security warrants, security rights, resales of installment loan contracts, repurchase options, government securities, or mortgages and mortgage pur-

<sup>23</sup> S. Rept. 93-1131, 93rd Cong., 2nd Sess. (1974).

<sup>24</sup> Pub. L. 93-463, § 212(d)(1) (1974). In 1978, Congress increased the maximum financial penalty for manipulation to \$500,000, Pub. L. 95-405, § 19(1). The maximum penalty was increased to \$1,000,000 in 1992. Pub. L. 102-546 § 212(a).

chase commitments, unless such transactions involve the sale thereof for future delivery conducted on a board of trade.”<sup>25</sup>

The Senate report on the 1974 legislation explained the rationale underlying the Treasury Amendment:

[T]he Committee included an amendment to clarify that the provisions of the bill are not applicable to trading in foreign currencies and certain enumerated financial instruments unless such trading is conducted on a formally organized futures exchange. A great deal of the trading in foreign currency in the United States is carried out through an informal network of banks and tellers. The Committee believes that this market is more properly supervised by the bank regulatory agencies and that, therefore, regulation under this legislation is unnecessary.<sup>26</sup>

In the mid-1970’s, following the extreme price volatility in the energy sector resulting from the Arab oil embargo, a new market for energy futures emerged. In 1978, NYMEX offered futures contracts in heating oil, and over the next several years NYMEX proposed a variety of futures contracts in other petroleum products. In 1983, NYMEX began trading in the WTI futures contract.<sup>27</sup>

Today, the vast majority of futures contracts traded on the exchange are unrelated to agriculture. Whereas as recently as the early 1970’s, most of the approximately 13 million futures contracts traded annually on domestic boards of trade involved agricultural commodities, in 1999, nearly 600 million futures contracts were traded annually in the United States, but with only a small fraction—about 11 percent—related to agriculture.<sup>28</sup>

In 1980, in a case involving the question of whether the CEA provided a private right of action, the U.S. Court of Appeals for the Second Circuit traced the history of the CEA and observed how the Act had been strengthened over the years to match the needs of the evolving futures markets:

The history of congressional concern with commodity futures trading has thus been one of steady expansion in coverage and strengthening of regulation. In 1936, 1968, and 1974 new commodities came under the CEA. In each of these years the power of the regulatory authority were augmented, and penalties were either extended, increased, or both. The question of Congressional intent with respect to private sanctions under the Act must be considered against this background of increasingly strong regulation designed to insure the existence of fair and orderly markets.<sup>29</sup>

Although one of the main purposes of the CEA was to discourage and punish market manipulation, manipulations and attempts at manipulation of the commodity markets have continued. In 1982,

<sup>25</sup> 7 U.S.C.A. § 2(i) (1999).

<sup>26</sup> S. Rept. 93-1131 (1974).

<sup>27</sup> See John Elting Treat, ed., *Energy Futures, Trading Opportunities for the 1990’s*, 20-23 (1990).

<sup>28</sup> Chicago Board of Trade, *Action in the Marketplace*, at 2.

<sup>29</sup> *Leist v. Simplot*, 638 F.2d 283, 296 (2d Cir. 1980), *aff’d sub nom. Merrill Lynch, Pierce, Fenner & Smith v. Curran*, 456 U.S. 353 (1982).

following the Hunt brothers' attempts to corner the silver market, one observer commented:

The 19th Century grain market in Chicago was littered with examples of attempted squeezes and corners; to a lesser extent it still is. Rings and corners in the stock market ended with the Great Crash and the establishment of the Securities and Exchange Commission in 1934. But commodities remained a temptation to the corner men. In the last generation corners were attempted in eggs, onions, vegetable oil, soybeans, and potatoes. The fact that market manipulation is now illegal does not stop people trying.<sup>30</sup>

More recent history demonstrates that manipulations are not "simply relics of the distant past."<sup>31</sup> Allegedly, the Hunt brothers squeezed the soybean market in 1977, as well as the silver market a couple of years later. The Feruzzis allegedly squeezed the CBOT soybean market in the late 1980's. "In 1991, the eminent investment bank and primary government securities dealer Salomon Brothers successfully cornered several issues of Treasury notes, thereby causing huge disruptions in the world's financial market and throwing a cloud of suspicion over it that has yet to dissipate completely."<sup>32</sup> As discussed in Appendix 1, the Sumitomo Corporation manipulated the price of copper in the mid-1990's, causing as much as a 30 percent rise in copper prices. And as discussed in the main section of this report, in 2000, a U.S. refiner obtained a large financial settlement from Arcadia, a crude oil trading company, in a lawsuit over alleged manipulation of the crude oil market.

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<sup>30</sup> Stephen Fay, *Beyond Greed*, at 60 (1982). For a list of Federal manipulation cases decided between 1940 and 1989, see Markham, *Manipulation of Commodity Futures Prices—The Unprosecutable Crime*, 8 Yale J. on Reg. 281 (1991) ("The commodity futures market has been beset by large-scale manipulations since its beginning.")

<sup>31</sup> Steven Craig Pirrong, *The Economics, Law, and Public Policy of Market Power Manipulation* (1996) at 3.

<sup>32</sup> *Id.* See also Nicholas Dunbar, *Inventing Money* 109–112 (2001).

## II. OVER-THE-COUNTER ENERGY DERIVATIVES: EXCLUSIONS AND EXEMPTIONS FROM COMMODITY EXCHANGE ACT

*“With the CFTC’s withdrawal from regulating many of the more popular derivatives in the late 1980’s and early 1990’s, it appeared that dealers in those financial products had found a virtually regulation-free promised land.”*

*—Philip McBride Johnson, former Chairman, CFTC (1999)*

The CEA provides the CFTC with jurisdiction over “agreements . . . and transactions involving contracts of sale of a commodity for future delivery traded or executed on a contract market . . . or any other board of trade, exchange, or market.” Neither the original Grain Futures Act of 1922, nor any of the subsequent amendments, defined or set forth the elements of a “futures contract” or the term “future delivery.” Rather, the term “future delivery” is defined only in reference to that which it is not—a “forward contract.” The CEA’s definition of “future delivery” merely states: “The term ‘future delivery’ does not include any sale of any cash commodity for deferred shipment or delivery.”<sup>33</sup>

The distinctions between “future contracts,” or “contracts for future delivery,” and “forward contracts” have never been settled. A key issue that arose after the 1974 expansion of the CEA and the enactment of the Treasury amendment was the extent to which the swaps and other over-the-counter derivatives that were coming into widespread use in the 1980’s could be considered contracts for future delivery within the scope of the CEA. Many of the OTC derivatives, such as swaps, call for one or both parties to make a stream of payments to the other party over a specified period of time. If these OTC derivatives were to fall within the definition of a contract for future delivery, then they would have become legally suspect because they were not being traded on an approved exchange. In the 1980’s, as large corporations and financial institutions increasingly used OTC derivatives to manage financial risks, the uncertainty of the legal status of these instruments became a significant concern. From then to the present, the CFTC, other Federal agencies with jurisdiction over financial instruments, the financial community, the oil industry, other commodity traders, and Congress have debated the extent to which these instruments should be regulated under the CEA.

### A. 1989 Swaps Policy Statement: Exemption for Certain OTC Swap Transactions

In 1989, in response to the call for more legal certainty, the CFTC issued a “Swaps Policy Statement” to clarify that it would

<sup>33</sup> 7 U.S.C.A. § 1a(19) (Supp. 2002).

not seek to regulate certain OTC swap transactions.<sup>34</sup> A swap transaction is essentially “an agreement between two parties to exchange a series of cash flows measured by different interest rates, exchange rates, or prices with payments calculated by reference to a principal base (notional amount).”<sup>35</sup> Financial swaps are used by corporations and financial institutions to hedge exposure to changing interest or currency exchange rates, or, on the other side of such a transaction, to speculate on interest or currency exchange rates. Commodity swaps are structured similarly to interest rate or currency swaps, except that payments are calculated in reference to the price of a specified commodity, such as crude oil.

In its 1989 Swaps Policy Statement, the CFTC held that although swap transactions had elements of futures contracts, most swap transactions were sufficiently distinguishable from futures contracts to conclude they were “not appropriately regulated as such under the Act and its regulations.” The CFTC set forth a number of criteria a swap transaction must meet to qualify for this exemption from regulation: (1) the swap agreement must not be fully standardized, meaning the terms must be negotiated by the parties and their terms must be “individually tailored;” (2) the swap agreement may not be terminated through an exchange-style offset with other swap agreements of opposite positions, and may be terminated only with the consent of the counterparty; (3) the swap agreement cannot be supported by the credit of a clearing organization, as futures contracts are supported on an exchange, and each party to the agreement must assume the credit risk of the other party; (4) the transaction must be undertaken in conjunction with a line of business, such as that conducted by a large corporation, commercial or investment bank, insurance company, or governmental entity; and (5) the swap transactions sought to be exempted may not be marketed to the public.

The 1989 Swaps Policy Statement, however, did not end the debate over the status of these types of contracts. The CFTC did not declare in its policy statement that swap transactions were excluded from regulation under the CEA; it only stated the CFTC had chosen not to regulate them “*at this time.*” The CFTC’s action left open the possibility that swap transactions could be regulated at some time in the future. This concern was heightened the very next year, when controversy erupted over the applicability of the CEA to the Brent market.

## **B. Exemptions for Certain Brent Crude Oil Contracts**

### **1. The Transnor Decision**

In April 1990, Judge William Conner, U.S. District Judge for the Southern District of New York, ruling on a motion for summary judgment in the case of *Transnor v. BP*,<sup>36</sup> held that 15-day Brent contracts were future contracts within the meaning of the CEA. As explained in more detail in Section III of the main report, these contracts provide for the delivery of a cargo of Brent crude oil, fully loaded at the Sullom Voe terminal in the North Sea, at a specified

<sup>34</sup> 54 Fed. Reg. 30,694 (1989).

<sup>35</sup> *Id.*

<sup>36</sup> 738 F. Supp. 1472 (S.D.N.Y. 1990).

month in the future. They are used for hedging, price discovery, and speculation, as well as for physical delivery of crude oil.

In *Transnor*, the plaintiff, a Bermuda-based oil trading company, alleged that several North Sea oil producers—BP, Shell, Conoco, and Exxon—had conspired to sell Brent crude oil at below-market prices in order to lower the tax imposed on their Brent production.<sup>37</sup> In December 1985, Transnor purchased, at an average price of \$24.50 per barrel, two 15-day Brent contracts for the delivery of two Brent cargoes (500,000 barrels per cargo) in March 1986. In early 1986, an OPEC price war erupted, and the price of crude oil plummeted. By the end of March, the price of Brent had fallen to \$13.80 per barrel. Transnor refused to take delivery of the crude oil and filed suit against the four producers of Brent crude for \$230 million in damages, claiming that they were partially responsible for the fall in price. Transnor alleged the Brent producers conspired to fix prices, in violation of the Sherman Antitrust Act, and manipulated the price of 15-day Brent contracts, in violation of the CEA.

In his ruling, Judge Conner first addressed the question of whether principles of comity and international law compelled the court to decline to exercise jurisdiction. The judge found that although the British government had expressed an intention to promulgate some binding regulations applicable to the Brent market, it had not actually issued any. The court concluded “application of U.S. antitrust and commodity laws does not create either an actual or potential conflict with existing British government regulation of Brent market transactions. That a conflict may arise in the future should the British government act is too uncertain to weigh against the exercise of jurisdiction.”<sup>38</sup> The court went on to find that the parties’ ties to the United States were “stronger than those to the United Kingdom,” the alleged conduct “clearly impacted U.S. commerce,” there were “issues of fact as to whether defendants intended to affect U.S. commerce or should reasonably have foreseen such an impact,” and “the U.S. is an important locus, if not the hub, of defendants’ alleged manipulation.”<sup>39</sup> In sum, the court held, “with all factors considered, both a quantitative and a qualitative tally favor the exercise of jurisdiction by this Court—a result which should not affront British interests.”<sup>40</sup>

After rejecting the defendants’ arguments to dismiss the plaintiff’s antitrust claims, the court turned to the defendants’ contention that 15-day Brent contracts were in reality “contracts of sale of a commodity for future delivery”—i.e., forward contracts—and therefore not within the scope of the CEA. In analyzing this claim, the court first reviewed the administrative and case law on the differences between futures contracts and forward contracts, and then examined the nature of the 15-day Brent market.

“Once distinguished by unique features, futures and forwards contracts have begun to share certain characteristics due to increasingly complex and dynamic commercial realities,” the court

<sup>37</sup> Shell and BP settled with *Transnor* and were dismissed from the case. Shortly after filing suit, *Transnor*’s oil trading operations went bankrupt.

<sup>38</sup> 738 F.Supp. at 1477.

<sup>39</sup> *Id.* at 1477–1478.

<sup>40</sup> *Id.*

stated. “The predominant distinction between the two remains the intention of the parties and the overall effect of the transaction.” In forward contracts, delivery of a physical commodity occurs, but is delayed or deferred for convenience or necessity.<sup>41</sup> “By contrast, futures contracts are undertaken primarily to assume or shift price risk without transferring the underlying commodity. As a result, futures contracts providing for delivery may be satisfied either by delivery or offset.”<sup>42</sup> In determining whether physical delivery is, in fact, intended, the courts and the CFTC look both to the terms of the contract and to the practices of the parties.<sup>43</sup>

In examining the 15-day Brent contract, the *Transnor* court found it had elements of both a futures contract and a forward contract. The court concluded that although the 15-day Brent contract embodied a binding commitment to buy or sell crude oil, physical delivery was not generally contemplated by the parties, and occurred only in a minority of transactions in the 15-day market. Thus, the court held the 15-day contracts were not forward contracts:

Moreover, the high degree of standardization of terms such as quantity, grade, delivery terms, currency of payment and unit of measure, which facilitate offset, bookout and other clearing techniques available on the Brent market, further evidence the investment purpose of Brent trading. The 15-day Brent market does not remotely resemble the commercial trading originally exempted from the Act. While this Court recognizes that commercial transactions have increased in complexity since the predecessor to the CEA was enacted, the interests of Brent participants, which include investment and brokerage houses, do not parallel those of the farmer who sold grain or the elevator operator who bought it for deferred delivery, so that each could benefit from a guaranteed price.<sup>44</sup>

The court then concluded the 15-day Brent contracts were futures contracts covered by the CEA:

Most importantly, the Brent contracts were undertaken mainly to assume or shift price risk without transferring the underlying commodity. Defendants acknowledge that the volume of Brent contract trading greatly exceeded the amount of physical oil available to satisfy such contracts. The volume of contracts traded and the high standardization of the contracts demonstrate the essential investment character of the 15-day Brent market. “With an eye toward [their] underlying purpose,” the Court concludes that *Transnor*’s 15-day Brent transactions constitute futures contracts.<sup>45</sup>

<sup>41</sup>The leading appellate case discussing these distinctions is *Commodity Futures Trading Comm. v. Co Petro Marketing Group, Inc.*, 680 F.2d 573(9th Cir. 1982).

<sup>42</sup>*Transnor*, 738 F.Supp. at 1489.

<sup>43</sup>Judge Conner also stated that language in an agreement requiring future delivery of the underlying commodity does not mandate the classification of the agreement as a forward contract, if the delivery requirement is not expected to be enforced. “This Court concludes that even where there is no ‘right’ of offset, the ‘opportunity’ to offset and a tacit expectation and common practice of offsetting suffices to deem the transaction a futures contract.” *Id.* at 1492.

<sup>44</sup>*Id.* at 1491.

<sup>45</sup>*Id.* at 1492.

With respect to Transnor's assertions, the court found there were issues of material fact, and denied the motion for summary judgment.<sup>46</sup>

## 2. Industry Response to Transnor

The *Transnor* decision opened up a can of worms for oil companies and traders in the Brent market—whether the CFTC would begin to regulate the hitherto unregulated 15-day Brent market, and whether the Brent contracts were legally invalid under the CEA because they had not been traded on an approved exchange. NYMEX President Patrick Thompson reflected the market's worry over the ruling, stating the *Transnor* decision “creates a concern that these are off-exchange futures contracts, which are illegal under Section 4(a) of the Commodity Exchange Act. If this holding stands, the 15-day Brent market would have to be discontinued in the U.S.”<sup>47</sup>

At the time the *Transnor* decision was issued, the CEA did not provide the CFTC with any flexibility as to how futures contracts were to be regulated. Under the CEA as it then existed, once an instrument was determined to be a futures contract, it was required to be traded on an approved exchange in accordance with all of the rules and regulations regarding exchange-traded contracts, or else be considered illegal. As the *Transnor* decision highlighted, this “all or nothing” regulatory scheme, which had existed since the original Act was passed in 1922, may have been adequate to deal with conventional contracts for the sale or delivery of agricultural commodities, but it did not provide any flexibility as to how to best deal with the swaps, derivatives, hybrids, and other novel financial instruments that had developed since the early 1980's.

The participants in the Brent market reacted swiftly. Several major oil companies and traders, including Shell, stopped trading 15-day Brent contracts with American firms; others, such as Exxon, suspended all trading in 15-day Brent contracts.<sup>48</sup> “The *Transnor* case has scared Brent's traders,” reported *The Economist*. “Many have quit the Brent market altogether, hedging instead on America's NYMEX and London's International Petroleum Exchange, the two big official oil-futures exchanges.”<sup>49</sup>

<sup>46</sup>The remaining defendants, Conoco and Exxon, settled approximately 1 month later. The terms of the settlement were sealed. Platt's Oilgram News, *Brent 15-Day Market Case Settled; Terms Expected to be Sealed, Say Lawyers*, May 23, 1990. The New York Times, *Suit on Price of Crude Oil is Settled*, May 23, 1990.

<sup>47</sup>Platt's Oilgram News, *NYMEX President Warns Forward Market Players of Risk From Transnor Ruling*, May 15, 1990. Thompson stated NYMEX would support a clarification by the CFTC that provided an exclusion from regulation of the 15-day Brent market for “true commercial interests.”

<sup>48</sup>Platts Oilgram Price Report, *Basin Users Turn to ARCO Portion*, May 2, 1990; Steven Butler, *Nervous Trading in a Market Held in Limbo*, Financial Times (London), May 3, 1990.

<sup>49</sup>The Economist, *Oil Trading; Brent Blues*, April 28, 1990. Because of the lack of transparency of the Brent physical market, it is not possible to determine with any degree of accuracy just how much the market was affected by the *Transnor* decision. One British publication reported that by the time the *Transnor* case was settled, about six weeks after the ruling, the 15-day Brent market had lost “at least two thirds of its liquidity.” Larry Black, The Independent (London), *Firms in Brent Oil Trial Agree to Settle Out of Court*, May 23, 1990. In his dissent from the CFTC's subsequent decision to exempt 15-day Brent contracts from regulation, Commissioner West quoted from several articles by *Petroleum Argus*, a leading price reporting service, that despite the *Transnor* decision Brent trading in April 1990 was higher than in April 1989 and not much lower than in April 1988, and that Brent trading had been steadily increas-

Within days of Judge Conner's decision, lobbyists descended upon the CFTC, seeking to mitigate the ruling.<sup>50</sup> "What the CFTC will do next is uncertain," an article in *Platts* stated, "but the lobbyists reportedly were urging the CFTC to state that it will not regulate the 15-day Brent market. One source said the judge's ruling did not mandate that the CFTC regulate Brent trade. Instead, it stated only that Brent trade was not 'forward' trading as defined by the Commodities Exchange Act, but instead is 'futures' trading."<sup>51</sup>

The British government promptly weighed in against the *Transnor* decision too. In a letter sent to the CFTC less than 2 weeks after the decision, Britain's Department of Trade and Industry (DTI) stated that the decision could be interpreted to mean that all trading in 15-day Brent contracts, even such trading between British persons within British territory, was subject to the U.S. commodities laws. This interpretation, according to the DTI, was "in the British government's view, contrary to international law and damaging to the British national interest." The DTI expressed particular concern that trades of 15-day Brent contracts within the United Kingdom could be declared illegal or void in the United States. The DTI proposed an urgent meeting with the CFTC to resolve the issue.<sup>52</sup>

In response to the concern over the *Transnor* decision, the CFTC immediately began "an examination" of the Brent issue.<sup>53</sup> "The probe appears to be triggered as much by pressure from Brent market participants as by Conner's ruling," *Platts* reported.

Seven days after the *Transnor* decision, the CFTC announced it was "considering actions appropriate to maintain United States commercial access" to the Brent market and committed itself to act "as expeditiously as possible."<sup>54</sup> According to *Platts*, "The CFTC issued its advisory in response to calls from Brent players who have been uncertain whether they can continue to trade paper Brent from the US after a ruling by a Federal district court last week . . . that the Brent 15-day contract is a futures contract."<sup>55</sup>

### 3. CFTC: 15-Day Brent Contracts are Forward Contracts

In response to the concerns of oil companies and traders, financial institutions, and the British government, CFTC Chairwoman Wendy Gramm quickly concluded the CFTC should not assert authority over the Brent market. In a speech to the Futures Industry Institute on May 2, 1990, Chairwoman Gramm "indicated aversion to regulating the 15-day Brent market," stating it is "not true that

ing since June 1990. CFTC, *Statutory Interpretation Concerning Forward Transactions, Dissent of Commissioner West, Commodity Futures Law Reports, Commerce Clearing House* ¶24,925 (October, 1990).

<sup>50</sup> *Platts Oilgram Price Report, Companies Still Sorting Transnor Impact; Brent Market Liquidity Impacted*, April 24, 1990.

<sup>51</sup> *Id.*

<sup>52</sup> *Platts Oilgram News, UK Agency Expresses Concern Over Conner Ruling on Brent Trading*, May 2, 1990; *The Financial Times* (London), *Britain Challenges US Jurisdiction Claim over Brent Crude Oil Market*, May 2, 1990.

<sup>53</sup> Robert Di Nardo, *Platts Oilgram Price Report, CFTC Begins Study of Brent Market Trading*, April 25, 1990.

<sup>54</sup> CFTC Advisory No. 31-90, April 25, 1990; *Platts Oilgram Price Report, CFTC Looking to Act Quickly on Brent Market*, April 26, 1990.

<sup>55</sup> *Id.*

any instrument with a bit of futurity is a futures contract and therefore within the CFTC's jurisdiction."<sup>56</sup>

Shortly afterwards, in mid-May, the CFTC reaffirmed that position. The CFTC and the British Department of Trade and Industry issued a joint release stating, "The Brent market is an international market and cannot be regarded as or regulated as if it were exclusively a U.S. market."<sup>57</sup> Concurrently, the CFTC staff sent a letter to the companies that had contacted the CFTC on the *Transnor* decision, stating:

As represented to the staff, it is our understanding that the market in 15-day Brent contracts among other things involves negotiated transactions between commercial parties, each of whom has the capacity to make or take delivery of Brent crude oil. These contracts are not offered or sold to the general public. Based on these representations the Task Force is of the view that these contracts fall within the category of transactions encompassed by the so-called forward contract exclusion.<sup>58</sup>

The letter went on to say that the CFTC likely would issue a formal interpretation of the CEA consistent with this view, and, in the meantime, "the staff will not recommend to the Commission any enforcement action under the Commodity Exchange Act or regulations thereunder based solely upon the activity of engaging in transactions involving such contracts."<sup>59</sup>

In late September 1990, the CFTC issued, by a 3 to 1 vote, a formal "statutory interpretation" to make clear that 15-day Brent transactions "are excluded from regulation under the [CEA] as sales of cash commodities for deferred shipment or delivery."<sup>60</sup> In determining that the 15-day contracts were forward contracts, the CFTC stated "it is significant that the transactions create specific delivery obligations. Moreover, the delivery obligations of these transactions create substantial economic risk of a commercial nature to the parties required to make or take delivery thereunder," such as theft, damage, or deterioration of the crude oil to be delivered. The CFTC majority noted that obligations for sale or delivery under the 15-day contracts were not discharged through "exchange-style offset," but rather could be cancelled only through individually negotiated agreements with the other parties in the distribution chain. "Under these circumstances," the majority concluded, "the Commission is of the view that transactions of this type which are entered into between commercial participants in connection with their business, which create specific delivery obligations that impose substantial economic risks of a commercial nature to these participants, but which may involve, in certain circumstances,

<sup>56</sup> Platt's Oilgram Price Report, *Gramm Speaks Out on Brent Regulation*, May 3, 1990.

<sup>57</sup> CFTC New Release No. 3248-90, May 16, 1990; Hattie A. Wicks, *The Oil Daily, U.S., British Agencies Reject Plans to Regulate Brent Forward Market*, May 17, 1990.

<sup>58</sup> *The Oil Daily, CFTC Outlines its View of Brent Trade*, May 17, 1990.

<sup>59</sup> *Id.*

<sup>60</sup> 55 Fed. Reg. 39188 (Sept. 25, 1990). On June 29, 1990, the CFTC had issued a draft statutory interpretation to the same effect. The draft statutory interpretation was not published in the Federal Register, the usual manner for public notice, but rather announced in a CFTC advisory, CFTC Advisory No. 49-90, June 29, 1990, which was sent only to several media outlets. The Advisory stated that a copy of the draft interpretation was available from the Commission's Office of Communication and Education Services, and that public comments were invited until July 13, 1990. About a dozen comments were received.

string or chain deliveries of the type described above, are within the scope of the [forward contract] exclusion from the Commission's regulatory jurisdiction."<sup>61</sup>

Commissioner Fowler C. West dissented, questioning whether the market had been so severely disrupted as to warrant such extraordinarily quick action on a complex issue. He questioned whether the majority's action, which he termed a significant change from existing law, was more properly classified as a rule-making, which would require notice-and-comment, rather than a statutory interpretation accompanied by a media advisory.

Commissioner West's dissent referenced the comments of the Chicago Board of Trade (CBT), which noted that the current methods for clearing and settlement in the 15-day Brent market were the same as the antiquated clearing and settlement methods previously used on the CBT more than 70 years ago, before the CBT created a clearing corporation for all trades on the exchange. "The CBT stated that at the time Congress first restricted futures trading to designated exchanges, CBT used a 'ring' method of clearing and settlement closely resembling today's Brent market. CBT argues that 'rather than distinguishing 15-day Brent contracts from futures contracts, the daisy chains, book-outs and cancellation agreements of circles and loops confirm that the 15-day Brent market is composed of the very kind of transactions intended to be regulated as futures contracts.'"<sup>63</sup>

The dissent also noted that the 15-day contracts were highly standardized, and that many of the companies urging the CFTC not to regulate the 15-day Brent market as a futures market had stated that these contracts were used for hedging and price discovery, which is the primary purpose of the futures markets.<sup>64</sup> He also observed that traders in the 15-day Brent market included speculators and traders who had no intention of ever taking or making delivery. "Those commenters seem to want the Commission to exclude from regulation even those hedging and pricing activities which Congress determined the Commission should regulate under the Commodity Exchange Act."<sup>65</sup>

In conclusion, he wrote, "Broadening the applicability of the forward contract exclusion to include transactions by traders who are speculators, who are not contemplating delivery, who are using generally standardized contracts, who routinely offset their positions and who do not use the underlying commodity itself is an erroneous interpretation of the Act."

<sup>61</sup>*Id.*

<sup>63</sup>West Dissent, at 10.

<sup>64</sup>See, e.g., Comment Letter of Phibro Energy, Inc., May 2, 1990 ("The participation by such entities in these markets provides price protection for the participants both in the Brent and related physical markets and adds significantly to the market's depth, liquidity, pricing efficiency and pricing transparency."); Comment Letter of Mobil Oil Corp., May 2, 1990 ("Because of its relevance in the pricing of a wide variety of international crude oils equity producers, refiners and traders also enter into 15-day Brent contracts to manage their price exposure in the market); Comment Letter of Bear Stearns, April 30, 1990 ("The Brent crude oil market is used regularly by Bear Stearns for its commercial needs, including as a hedging mechanism for non-U.S. oil that, in Bear Stearns' view, cannot be as efficiently protected under the New York Mercantile Exchange's futures contract which is sensitive to domestic economic developments."); see also Comment Letter of Mobil Oil Corp. on Regulation of Hybrid and Related Instruments, April 11, 1990 ("Mobil and other major participants in these markets often enter into transactions to manage price risk, rather than to transfer ownership of the underlying product.").

<sup>65</sup>West Dissent, at 12.

Although he disagreed with the majority's conclusion that the 15-day Brent contracts were forward rather than futures contracts, Commissioner West did not believe the 15-day contracts needed to be traded on designated U.S. exchanges. He suggested several alternatives for the treatment of the 15-day Brent market that, in his opinion, would preserve the legal validity of these contracts without changing the meaning of the forward contract exclusion. His preferred alternative would be for Congress to provide the CFTC with the authority to exempt certain transactions from the exchange-trading requirement:

The cleanest way for the Commission to permit such markets to operate without contract market designation would be for it to have the authority to exempt certain transactions by rule, regulation or order from the exchange trading limitation of Section 4(a) of the Act, when in the public interest to do so. The Brent situation may demonstrate the desirability of such authority. Congress could provide the Commission such exemptive authority, and the Commission could then exercise that authority in a manner recognizing historic concerns about fraud and manipulation.<sup>66</sup>

A couple of months later, "still steamed" about the majority's handling of the Brent issue, Commissioner West again took issue with the majority's actions.<sup>67</sup> In a public speech, Commissioner West expanded his criticisms of the procedures used by the majority for its new interpretation of the forward contract exclusion:

While the standard notice and public comment procedures of rulemaking were not followed in issuing the statutory interpretation, some dozen comments were received. Even though the Commission issued a press release inviting comments on the draft statutory interpretation, this severely limited opening in the decision-making process occurred only after some individual commissioners became concerned about the scope of the interpretation's coverage and insisted that some public participation was necessary. Those instincts were correct and should have been followed farther.

At the very least the Commission, as an expert agency, is obligated to take its own hard look at an issue. This was not done. Instead, the majority of the Commission seems to have relied on the representations of parties with a substantial stake in the outcome of our action. . . . The Commission has not made its own independent study of [the Brent] market, nor has it taken appropriate steps to seek

<sup>66</sup> West Dissent, at p.19. In an unusual move for a Federal regulatory agency, the CFTC majority—Chairwoman Gramm and Commissioners Kalo Hineman and William Albrecht—blocked the official publication of Commissioner West's views. As a result of the majority's action, in 1992, Congress amended the CEA to require the publication of all dissenting opinions. "Whenever the Commission issues for official publication any opinion, release, rule, order, interpretation, or other determination on a matter, the Commission shall provide that any dissenting, concurring, or separate opinion by any Commissioner on the matter be published in full along with the Commission opinion, release, rule, order, interpretation, or determination." 7 U.S.C.A. § 4a(h)(3) (West 1999 & Supp 2002).

<sup>67</sup> Securities Week, *CFTC May Not Be Able to Live Down "Mistake" on Brent Oil Decision*, December 3, 1990.

out the views of those parties who might oppose the proposition that Brent transactions are forward contracts, as it likely would have obtained in a rulemaking. These were the minimum steps that we should have taken.<sup>68</sup>

Commissioner West again stated that the Brent contracts were “largely indistinguishable from futures contracts.” Furthermore, he warned, “The Commission may soon be paying a price for its politically expedient statutory interpretation. I doubt that its new forward contract exemption can be restricted to large international oil and trading firms represented by influential lawyers. The public, down the road, will suffer from this fit of de-regulation, no matter how well-intended. I believe Congress expects us to have more concern for the public.”<sup>69</sup>

Later, the North American Administrators Association (NASAA), representing “the 50 state securities agencies responsible for investor protection and the efficient functioning of the capital markets at the grassroots level,” characterized the CFTC’s response to the *Transnor* as “quick, but beyond its authority and misguided. In its attempt to calm oil traders, producers, and purchasers, the CFTC went too far.”<sup>70</sup> The state regulators viewed the CFTC’s statutory interpretation as incorrect and dangerous:

The CFTC’s solution was a bad one. It decided to “over-rule” the *Transnor* court and, in effect, create an exemption. Since it lacked exemptive authority, however, it chose to alter the traditional definitional elements of a futures contract. The Commission arbitrarily announced, under the guise of merely “interpreting” the law, that a new standard now existed. As a result, the CFTC interpreted away its own jurisdiction and disclaimed authority over a broad category of products. The Commission seemed not to care that by changing the definition of a futures contract, the new criteria threatened to shield fraud in the trading of other commodities—a hefty price to pay for helping the oil companies.<sup>71</sup>

Shortly after he left the CFTC, Commissioner William Albrecht described the reasoning underlying the CFTC’s Brent interpretation:

[Hybrids, swaps and Brent contracts] had some, but not all, of the characteristics of a futures contract. The law, however, did not contemplate the existence of a partial futures contract—it was a futures contract or it was not. In each case, however, the Commission found a way to rule that it would not regulate these instruments, even though they did contain futures or options-like components. The Commission believed there was not need to extend its reg-

<sup>68</sup> Remarks by Commissioner Fowler C. West, CFTC, *The Brent Issue: More Than A Statutory Interpretation*, before the Committee on Commodities and Futures Law, New York State Bar Association, November 29, 1990.

<sup>69</sup> *Id.*

<sup>70</sup> Hearing before the House Subcommittee on Environment, Credit, and Rural Development, Committee on Agriculture, *To Amend the Commodity Exchange Act to Ensure the Continued Application of The Act’s Antifraud and Antimanipulation Protections*, Statement of Wayne Klein, on behalf of NASAA, June 30, 1993.

<sup>71</sup> *Id.*

ulatory system to these instruments, either because they were regulated elsewhere (hybrids) or the participants did not need the type of regulation provided by the CFTC (swaps and Brent oil contracts).<sup>72</sup>

Philip McBride Johnson, Chairman of the CFTC in the early 1980's, has since criticized the CFTC's Brent interpretation for muddying the test for when an instrument is a futures contract under the CEA: "[T]he historical litmus test which was coldly objective (no delivery? not a forward contract) has been displaced by a devotion to form and process."<sup>73</sup> The former Chairman also described the relief in the financial markets that followed the CFTC's 1989 swaps policy statement and 1990 Brent statutory interpretation: "With the CFTC's withdrawal from regulating many of the more popular derivatives in the late 1980's and early 1990's, it appeared that dealers in those financial products had found a virtually regulation-free promised land."<sup>74</sup>

### C. Exemptions for Energy Contracts

#### 1. Futures Trading Practices Act of 1992

**Summary: Congress provided the CFTC with discretion to exempt certain swaps and energy contracts that could be considered to be futures contracts from CEA requirements.**

Although the CFTC quickly countered the *Transnor* decision with its statutory interpretation relating to the Brent market, the CFTC's actions did not eliminate the concern that another court could declare certain derivatives, including swaps and energy contracts, illegal under the CEA because they were not traded on a designated futures exchange.<sup>75</sup> Firms and traders pressed Congress for a statutory amendment to the CEA to ensure it would not be interpreted by courts in a manner that would invalidate existing contracts and markets.

In 1992, Congress enacted the Futures Trading Practices Act (FTPA) to amend the CEA to provide the CFTC with discretion to determine that future contracts—or other instruments that might be considered to be futures contracts—did not have to be traded on a designated futures exchange. The Conference Report accompanying the 1992 Act explains the rationale for the exemptive authority:

[T]he conferees recognized the need to create legal certainty for a number of existing categories of instruments which trade today outside of the forum of a designated contract market. These instruments may contain some features similar to those of regulated exchange-traded products but are sufficiently different in their purpose, function, design, or other characteristics that, as a matter of policy, traditional futures regulation and the limitation of

<sup>72</sup>William P. Albrecht, *Regulation of Exchange-Traded and OTC Derivatives: The Need for a Comparative Institution Approach*, 21 Iowa J. Corp. L. 111, 125 (1995).

<sup>73</sup>Philip McBride Johnson, *Derivatives*, at 40 (1999).

<sup>74</sup>*Id.*

<sup>75</sup>See, e.g., Securities Week, *Legislation Needed to Resolve Ambiguities Left by Transnor Settlement*, May 28, 1990; Business Law Brief, *Brent Litigation Settled*, June 1, 1990.

trading to the floor of an exchange may be unnecessary to protect the public interest and may create an inappropriate burden on commerce.<sup>76</sup>

The FTPA established the principle that although a contract may have some features of a futures contract, it does not necessarily have to be traded on a designated exchange. It provided the CFTC with the flexibility to determine the appropriate level of regulation for novel types of financial instruments, such as swaps and derivatives, that were becoming popular in the market.<sup>77</sup>

The report of the Senate Committee on Agriculture, Nutrition, and Forestry accompanying the Senate bill explained that in order to foster the development of new financial instruments the CFTC needed to have the flexibility to determine whether such new instruments that had some elements of a futures contract need be traded on an approved exchange:

Since 1974, when Congress created the CFTC, the principle of “functional” regulation was intended to govern the introduction of new financial instruments: “the CFTC would \* \* \* regulate markets and instruments that would serve a hedging and price discovery function and the SEC would regulate markets and instruments with an underlying investment purpose.” S. Rept. 97-384, 97th Cong., 2nd Sess. 22 (1982).

But increasingly, this principle has become blurred as novel “hybrid” instruments are developed. Bonds—a traditional security—can be transformed to offer a return indexed to the price of a commodity like oil or gold. The final product may have significant attributes of a commodity option or future.

This lack of clarity over the extent of CFTC jurisdiction with respect to new “hybrids” and the statutory requirement that all futures contracts must trade on designated contract markets have combined to create a legal cloud that may inhibit the emergence or development of many such markets. Under current law, the CFTC has the power to permit a commodity option to trade off exchange in accordance with CFTC rules, but the CFTC has no authority to exempt any futures product from the exchange-trading requirement. This disparate treatment could prevent the CFTC from permitting the introduction of many economically useful new products to the marketplace.<sup>78</sup>

Generally, the FTPA authorized the CFTC to exempt various swap and hybrid transactions from the exchange-trading requirements and other provisions of the CEA. Specifically, the FTPA authorized the CFTC, either on its own initiative or upon application of any person, to exempt from the exchange-trading requirement, or any other requirement of the CEA, “any agreement, transaction, or class thereof—between “appropriate persons.”<sup>79</sup> The types of

<sup>76</sup> H. Rept. No. 102-978, 102nd Cong., 2nd Sess. 81 (1992).

<sup>77</sup> Pub. L. 102-546, 106 Stat. 3590 (1992).

<sup>78</sup> S. Rept. 102-22, 102nd Cong., 1st Sess. 6 (1991).

<sup>79</sup> Section 4(c)(1) of the CEA, as amended by the FTPA, provides the CFTC with authority to exempt from the CEA, “any agreement, contract, or transaction (or class thereof) *that is other-*

agreements that Congress intended the CFTC to initially exempt under this authority included a variety of OTC derivatives, such as non-standardized swap agreements, “hybrid instruments that are predominantly securities or depository instruments,” forward contracts, and bank deposits and accounts. The “appropriate persons” who could be authorized to trade in these instruments off-exchange included large commercial institutions, such as banks, savings associations, insurance companies, investment companies, commodity pools, large corporations, employee benefit plans, governmental entities, securities brokers, and futures merchants and brokers.

Congress qualified this broad exemptive authority in several respects. First, the Conference Report emphasized that the exemptive authority should be applied narrowly to the four specified categories of instruments—swaps, hybrids, forward contracts, and bank deposits and accounts. The conferees stated that any further exemptions should be granted only after further study and deliberation by Congress:

The goal of providing the Commission with broad exemptive powers is not to prompt a wide-scale deregulation of markets falling within the ambit of the Act. Rather, it is to give the Commission a means of providing certainty and stability to existing and emerging markets so that financial innovation and market development can proceed in an effective and competitive manner. Except as discussed below, the Conferees do not intend for the Commission to use this authority to grant broad exemptions from the Act for instruments or markets before these studies are completed and Congress has ultimately decided the issues raised by them.<sup>80</sup>

The conferees specifically directed the CFTC to consider whether to grant the 15-day Brent market an exemption under this new authority:

One court has found transactions in the Brent crude oil market to be futures contracts. See *Transnor (Bermuda) Limited v. BP North America Petroleum*, 738 F.Supp. 1472 (1990). In response, the Commission has issued a statutory interpretation to the effect that certain transactions in that market qualify as sales of cash commodities for deferred shipment or delivery, that is, forward contracts, and, as such, are not subject to regulation under the Act.

Many markets of this nature are international in scope; foreign parties are already engaging in such transactions free of restraints imposed by the Act that may create competitive disadvantages for U.S. participants.

Without expressing a view regarding the applicability of the Commission’s statutory interpretation, the Conferees encourage the Commission to review this situation and

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*wise subject to subsection (a) . . .*” (emphasis added). The contracts that are “otherwise subject to subsection (a)” are futures contracts “for the purchase or sale of a commodity for future delivery,” which, under the CEA, “does not include any sale of any cash commodity for deferred shipment or delivery,” i.e., a forward contract. 7 U.S.C.A. §§ 1a(11), 6(a), (c) (West 1999 & Supp. 2000).

<sup>80</sup> H. Rept. No. 102-978, at 81.

these contracts to determine whether exemptive or other actions should be taken.<sup>81</sup>

Second, in determining whether to grant any exemption, Congress intended that the CFTC nonetheless be able to effectively regulate the affected markets within its jurisdiction. Before granting any exemption, the CFTC was required to find that such exemption would be “consistent with the public interest” and the purposes of the Act, and “will not have a material adverse affect on the ability of the Commission or any contract market to discharge its regulatory or self-regulatory duties under this Act.”

The Conference Report emphasized that in granting exemptive authority for certain instruments it was not making any determination that such instruments were futures within the scope of the Act, and that in making any determination to exempt instruments from the exchange-trading requirement the CFTC need not make any such determination. “Rather, this provision provides flexibility for the Commission to provide legal certainty to novel instruments where the determination as to jurisdiction is not straightforward.”<sup>82</sup>

Passage of the FTPA reduced the importance of categorizing financial instruments as futures or forward contracts. Under the FTPA, even if an instrument is classified as a futures contract within the jurisdiction of the CFTC, as opposed to a forward contract outside of the scope of the CEA, the CFTC may determine that the exchange-trading requirement or other requirements of the CEA do not apply.

## 2. CFTC Exemption for Energy Contracts

**Summary: The CFTC exempted energy contracts between large companies from the exchange-trading requirement and the anti-fraud provisions of the CEA.**

### a. CFTC Order Granting Exemption

The Futures Trading Practices Act was signed into law on October 28, 1992. Two and a half weeks later, on November 16, nine crude oil, natural gas, and other energy businesses filed with the CFTC an application for an exemption under the new Act from the exchange-trading requirement for certain transactions in energy contracts.<sup>83</sup>

On January 21, 1993, on the final day of the Administration of President George H.W. Bush, the CFTC approved a final rule exempting certain non-standardized swap agreements from the requirement that all futures contracts be traded on a designated exchange.<sup>84</sup> At the same time, it issued a proposed order granting a

<sup>81</sup>*Id.* at 82.

<sup>82</sup>*Id.*

<sup>83</sup>The nine firms were BP Oil Company, Coastal Corporation, Conoco Inc., Enron Gas Services Corp., J. Aron & Company, Koch Industries, Inc., Mobil Sales and Supply Corp., Phibro Energy Division of Solomon Inc., and Phillips Petroleum Company. Hearing before the House Subcommittee on Environment, Credit, and Rural Development, Committee on Agriculture, *To Amend the Commodity Exchange Act to Ensure the Continued Application of the Act's Antifraud and Antimanipulation Protections*, June 30, 1993, at 132.

<sup>84</sup>55 Fed. Reg. 5587 (1993). The CFTC's rule adopted the same definition of “swap agreement” that is used in the Bankruptcy Code, 11 U.S.C. 101 (55), and limited the exemption's applica-

similar exemption to large commercial participants in various energy contracts.<sup>85</sup>

On April 20, 1993, the CFTC approved, by a 2 to 1 vote, a final order granting an exemption for energy contracts from the exchange-trading requirement of the CEA, “thereby formalizing with an express order a previous interpretative order which stemmed from the Brent Oil-Transnor dispute.”<sup>86</sup> The CFTC’s final order applied only to contracts among a limited class of large commercial participants who were “appropriate persons” under the FTPA, such as a bank, trust company, large corporation, securities broker-dealer, or a futures commission merchant. To qualify for the exemption, these commercial participants must, in connection with their business activities incur risks, in addition to price risks, related to the underlying physical commodities, such as the risks of damage in transit, and the participants in the transaction also must be able to make or take delivery of the commodity.

The final order was not limited to Brent contracts, but applied to a broad class of energy contracts “for the purchase and sale of crude oil, condensates, natural gas, natural gas liquids or their derivatives which are used primarily as an energy source.” To qualify for the exemption, such contracts must be: (1) between covered commercial participants; (2) individually negotiated; and (3) impose binding obligations to make and receive delivery of the underlying commodity. With respect to the latter condition, the CFTC’s order stated that there must be “no right of either party to effect a cash settlement of their obligations without the consent of the other party . . . *provided, however*, that the parties may enter into a subsequent book out, book transfer, or other such contract which provides for the settlement of the obligation in a manner other than by physical delivery of the commodity specified in the contract.”<sup>87</sup>

Although the final order exempted these energy contracts from the exchange-trading requirement, the CFTC stated it would continue to apply the basic statutory authorities under sections 6(c), 6c, 6(d), and 9(a)(2) of the CEA to prevent manipulation.<sup>88</sup> The CFTC stated that these anti-manipulation provisions will continue to apply, “to the extent that these provisions prohibit manipulation

bility to a subset of “appropriate persons” that were termed by the rule as “eligible swap participants.” The swap agreements that were eligible for the exemption could not be “part of a fungible class of agreements that are standardized as to their material economic terms.”

<sup>85</sup> 58 Fed. Reg. 6250 (1993).

<sup>86</sup> Securities Week, *CFTC Has Split Vote Over Regulatory Exemption for Forward Energy Contracts*, April 19, 1993; 58 Fed. Reg. 21286 (1993).

<sup>87</sup> In a reference to the daisy-chain method of settling 15-day Brent contracts, the CFTC explicitly clarified that the obligation to take delivery could be satisfied “regardless of whether the buyer lifts or otherwise takes delivery of the cargo or receives pipeline delivery, or as part of a subsequent contract, passes title to another intermediate purchaser in a ‘chain,’ ‘string’ or ‘circle’ within a ‘chain.’”

<sup>88</sup> Section 6(c) provides the CFTC with authority to issue a show cause order and conduct a subsequent administrative hearing to prohibit any person from trading if there is reason to believe the person has manipulated, attempted to manipulate, or is manipulating or attempting to manipulate the market price of any commodity. 7 U.S.C.A. §§9, 15 (West 1999 & Supp. 2002).

Section 6c authorizes the CFTC to bring an action in Federal court to obtain a temporary or permanent injunction or restraining order whenever it appears that any person has violated or is about to violate any provision of the CEA or CFTC rule. 7 U.S.C.A. §13a-1 (West Supp. 2002).

Section 6(d) authorizes the CFTC to issue cease and desist orders in manipulation cases, and levy civil penalties for failure to obey such orders. *Id.* at §13b.

Section 9(a)(2) makes manipulation of or attempts to manipulate the price of a commodity a felony punishable by a fine of up to \$1,000,000 and imprisonment of up to 5 years. *Id.* at §13.

of the market price of any commodity in interstate commerce or for future delivery on or subject to the rules of any contract market.

In the most controversial aspect of its decision, the CFTC stated that the anti-fraud provisions of the CEA would *not* continue to apply to energy contracts. The CFTC majority stated that most comments agreed with the views expressed by one commenter, that “‘given the commercial characteristics of these transactions and the significant requirements to be ‘commercial participants’ and ‘appropriate persons,’ the [commenter] \* \* \* does not believe that section 4[4b] of the Act (anti-fraud) should be applied to Energy Contracts.’” The majority stated, “In this particular instance, the Commission concurs with the commenters that it need not retain section 4b authority, to whatever extent that section of the Act would otherwise be applicable to these transactions.”

In his concurring opinion, Acting Chairman William Albrecht explained the CFTC “has never regulated this market, nor has sought to regulate it.” Further, he stated, “The Commission is not aware of fraudulent practices perpetrated against the general public by the participants in this market, nor indeed have any of the commercial participants in this market complained to the Commission of any fraudulent practices by other participants.” Because this market “is characterized by principal to principal transactions between large sophisticated commercial entities,” the Acting Chairman wrote, “there generally do not appear to be any concerns about the ability of these market participants to perform their obligations.” Acting Chairman Albrecht wrote, “There does not appear to be any reason sufficient to justify commission regulation, nor any necessity for the Commission to involve itself in this market.”

Just before the CFTC’s final vote granting this exemption, the Acting Chairman emphasized his view that the CFTC had no knowledge of the energy markets and therefore had no ability to monitor those markets. “In fact,” Albrecht stated, “the CFTC does not and cannot supervise this market.”<sup>89</sup>

Commissioner Sheila Bair dissented from the majority’s “failure to retain the general anti-fraud provisions contained in section 4b and 4o of the Commodity Exchange Act.” She criticized the majority’s reasoning in several ways. First, she wrote, the Commission “has never recognized an exemption to its jurisdiction based solely on the ‘commerciality’ of the participants, nor can I see any policy reason why commercial firms engaging in futures transactions should not have the basic protection of our anti-fraud provisions.”

Commissioner Bair also disagreed with the majority’s position that sophisticated market participants do not need the anti-fraud protections of the CFTC, arguing that “if we are to rationalize exemptions from anti-fraud and other components of our regulatory scheme on the basis of ‘sophistication’ of market users, we might as well close our doors tomorrow, because approximately 98 percent of users of regulated, exchange-traded futures” would meet the eligibility requirements of the exemption.

<sup>89</sup> Alan Kovski, *CFTC Exempts Cash Market from Controls*, *The Oil Daily*, April 14, 1993.

Commissioner Bair stated that the exemption from the anti-fraud provisions went far beyond what was necessary in the case at hand and set a “dangerous precedent”:

What is especially frustrating to me is that we do not need to paint ourselves into this corner. The main reason why the CFTC sought general exemptive authority in last year’s reauthorization was so that we would have the flexibility to craft appropriately tailored exemptive relief based on public policy considerations, instead of having to deal with the “all or nothing” jurisdictional decisions we had to make in the past. Yet, we are still following this “all or nothing” approach, when in my view, we should be carefully weighing individual aspects of our regulatory structure and making a reasoned determination as to which requirements should and should not apply to a particular class of transactions. And, for the reasons I have stated, I do not believe the case has been made for providing an exemption from basic anti-fraud provisions.

A *Washington Post* article also sounded this cautionary note as to the potential effect of this exemption for energy contracts:

The CFTC’s decision not to regulate energy contracts means the Federal Government will have no way of monitoring these growing markets in which huge sums of dollars change hands every year. If a big player failed to make good on a contract, the other participant might suffer such huge losses that it, too, would default on contracts, sending the ripples throughout the financial system.<sup>90</sup>

At the time of this CFTC decision in 1993, the collapse of Enron and the evidence of fraud and manipulation in energy markets in the late 1990’s were still several years in the future.

#### **b. Congressional Hearings on CFTC Order**

Barely a week after the CFTC granted the exemptions for energy contracts, Representative Glenn English, Chairman of the House Agriculture Subcommittee with jurisdiction over the CFTC, held a hearing on the CFTC’s decision to exempt these contracts from the CEA’s anti-fraud provisions.<sup>91</sup>

Acting Chairman Albrecht defended the Commission’s position, contending that retention of anti-fraud authority over the energy markets would actually be worse for the public than granting the exemption. Retention of this authority, in his view, “would inject the illusion of Commission supervision into a market where there is none. In that regard, some may take comfort from the coverage of 4b [anti-fraud authority], but it would be cold comfort indeed without the benefits of any ongoing regulation. After all, the Commission just does not have the resources necessary to adequately

<sup>90</sup> Jerry Knight, *Energy Firm Finds Ally, Director in CFTC Ex-Chief*, *The Washington Post*, April 17, 1993.

<sup>91</sup> John M. Doyle, *House Chairman Slams CFTC Exemption of Off Exchange Energy Contracts*, *The Associated Press*, April 28, 1993.

regulate these markets. In short, the benefits of extending the coverage of 4b to this market are not apparent.”<sup>92</sup>

Acting Chairman Albrecht made it clear that, in his view, the CFTC should maintain minimal regulatory authority over the energy markets:

The genius of [the FTPA] authority is that it frees us from the increasingly meaningless debate over whether something is a future or not. Instead, we can concentrate on designing the appropriate regulatory scheme for products that have futures-like characteristics.

We can consider how much regulation by the CFTC is needed based upon the characteristics of the market, such as the customer base, the market’s purpose, the potential for fraud, and the availability of other governmental oversight.

For some products, such as the energy contracts under discussion today, this may mean almost no oversight by the CFTC. For others, such as swaps, we’ve decided to maintain more oversight.<sup>93</sup>

Albrecht noted that the participants in the energy markets “are large commercial entities, well aware of their contractual rights and legal remedies,” so that they neither needed nor wanted the protections afforded by the statute. “This market has been in operation for over a century, and has gotten along just fine without CFTC oversight,” he testified.<sup>94</sup>

Commissioner Bair, who dissented from the CFTC’s decision, told the House Subcommittee, “To my knowledge, it is unprecedented for the Commission to provide relief from antifraud protections for transactions that are not subject to the jurisdiction of another regulator.”<sup>95</sup>

NASAA, an organization representing the securities agencies of the 50 states, voiced its concerns regarding “a more general (and

<sup>92</sup>Statement of Dr. William P. Albrecht, Acting Chairman, CFTC, Hearing before the House Subcommittee on Environment, Credit, and Rural Development, Committee on Agriculture, *Review of the Commodity Futures Trading Commission’s Discretion to Exempt Certain Transactions from Antifraud Provisions of the Commodity Exchange Act* (hereinafter House April 1993 Hearing), April 28, 1993, at 53.

Dr. Albrecht also voiced the concern that regulation would drive markets overseas: “I am concerned that maintaining section 4b authority over this market would provide little, if any, benefit, and perhaps cause very real harm. If section 4b remains an issue, some international commercial participants will continue to refuse to do business with U.S. energy firms, and some U.S. firms will set up off-shore branches. In short, retaining 4b authority will damage U.S. international competitiveness.” *Id.*

<sup>93</sup>House April 1993 Hearing, *supra* at 11.

<sup>94</sup>*Id.*

<sup>95</sup>Prior to the decision, several senior CFTC officials had raised concerns with the proposed exemption from the anti-fraud requirements. The CFTC’s Director of Enforcement commented there was no precedent in the securities laws for an exception to the anti-fraud protections, stating that “we are not aware of any Securities and Exchange Commission exemption that excludes securities products from anti-fraud jurisdiction.” Memorandum from Dennis Klejna, Director, Division of Enforcement, to Gerry Gay, Director, Division of Economic Analysis, April 8, 1993, reprinted in Hearing before the House Subcommittee on Environment, Credit, and Rural Development, Committee on Agriculture, *Amend the Commodity Exchange Act to Ensure the Continued Application of The Act’s Antifraud and Antimanipulation Protections* (hereinafter House June 1993 Hearing), June 30, 1993, at 6–7.

Similarly, the Director of the Division of Trading and Markets wrote, “To my knowledge, the Commission has never before exempted transactions in products subject to its jurisdiction from the anti-fraud provisions of the Act unless another regulatory regime clearly applied to such transactions.” Memo from Andrea M. Corcoran, Division of Trading and Markets, to Files, *Exemption for Certain Contracts in Energy Products*, April 9, 1993, reprinted in House April 1993 Hearing, *supra* at 85–87.

disturbing) trend at the CFTC—that is, increasingly inadequate and lax oversight of the commodities markets.”<sup>96</sup> NASAA described the energy contract exemption as:

Just the latest example of what perhaps may be best characterized as the agency’s “reluctance to regulate,” even in the face of blatant threats to investors and the integrity of the markets. Worse yet, the Commission has vigorously guarded what it believes to be its “turf,” only to turn around and severely limit its own regulatory role. This minimalist approach seems to be one of “we won’t police the area but we don’t want anyone else to either.”

\* \* \*

I am deeply concerned that during the past several years, the CFTC has embarked on a course of abandoning and repudiating its responsibilities to protect the integrity of the categories of energy products from the anti-fraud and anti-manipulation provisions of the CEA is the most recent, and a most egregious, example of this new course. Without active and vigorous oversight, the markets under the CFTC’s exclusive jurisdiction invite fraud and abusive trading.<sup>97</sup>

Chairman English took issue with the rationale that large sophisticated players in the market did not need the CEA’s protections against fraud:

I’ve heard, “Well, these are big boys. Let them take care of themselves.” I would suggest to you, before this thing is done, as a consequence of your actions, there are going to be some little people that are going to get hurt, too. They may be big in our part of the country, but they’re little in this world, and it seems like, that any time when the big people get hurt, they have to fall someplace, and they fall on an awful lot of little people. The little folks end up bearing a good deal of this burden.<sup>98</sup>

Near the end of the hearing, Chairman English expressed frustration with the CFTC’s position:

It brings us down to the real question of “What in God’s name is the CFTC all about?” If it’s not—if we can’t even count on the CFTC to protect the public from fraud, if we can’t depend on the CFTC not to give away the store, from the standpoint of giving blanket—not exemptions, exclusions—that’s an outrage. . . . [w]hen it comes down to opening the door to fraud, that’s simply going too far. That’s not deregulation, that’s just blatant irresponsibility. . . . In the 18 years I’ve been in Congress, this is the most irresponsible decision I’ve come across.<sup>99</sup>

<sup>96</sup>Testimony of Wayne Klein, NASAA, House June 1993 Hearing, at 144, 147.

<sup>97</sup>*Id.*

<sup>98</sup>House April 1993 Hearing, *supra* at 22.

<sup>99</sup>*Id.*, at 44–45. At this hearing Chairman English revealed that during the rulemaking process on the exemption for swap agreements the CFTC had intended to exempt those swap agree-

Immediately after the hearing, Chairman English “told reporters the acting head of the agency ‘would do a real service to the country’ if he resigned.”<sup>100</sup>

Two months later, Chairman English held another hearing, this time focusing on legislation he had introduced to overturn the CFTC’s energy contract order insofar as it exempted such contracts from the CEA’s anti-fraud provisions. His bill also would have prohibited the CFTC from granting any exemptions under the FTPA to the anti-fraud and anti-manipulation provisions of the CEA.

In testimony opposing the legislation, the CFTC majority reiterated the rationale it had previously stated in its order and at the prior hearing. But the CFTC went even further, extending its exemptive reasoning to the CEA’s anti-manipulation provisions as well. Writing for himself and Commissioner Dial, Acting Chairman Albrecht stated there was no need to retain anti-manipulation authority over the energy markets:

The concerns raised about eliminating Commission flexibility with regard to anti-fraud jurisdiction also apply to manipulation jurisdiction. There does not appear to be a need for retaining this authority, there will not be significant benefits gained by retaining it generally and there are very real burdens to be placed on the exempt markets.<sup>101</sup>

During this hearing, the CFTC made it clear that it intended to apply the 1990 Brent Statutory Interpretation to the Brent market, and therefore *exclude* the 15-day Brent contracts from all regulation under the CEA, rather than consider them merely *exempt* energy contracts under the new 1993 energy contracts exemption. This distinction between *excluded* forwards contracts, which are not subject to the CEA at all, and *exempt* derivatives contracts, which are subject to a limited form of regulation, first appeared following the CFTC’s creation of the 1993 energy contract exemption. This distinction has become increasingly significant following enactment of the Commodity Futures Modernization Act of 2000, which bases a number of provisions upon this distinction.

Commissioner Bair, who opposed the CFTC’s broad energy contract exemption, still supported the Brent exclusion. In her testimony in support of Chairman English’s bill, she wrote that the bill “will achieve the important goal of ensuring that the anti-fraud and anti-manipulation protections of the Act continue to apply to transactions exempted by the Commission from other regulatory requirements. Preserving such authority in no way implies that particular types of exempted off-exchange transactions such as traditional swaps or 15-day Brent Oil contracts are in fact future contracts subject to CFTC jurisdiction.”<sup>102</sup>

Kenneth Raisler, an attorney representing the Energy Group—the nine companies that had applied for the energy contracts ex-

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ments from the anti-fraud provisions as well. Chairman English recounted that when this decision “was barreling down the track about 90 miles an hour,” he telephoned Chairwoman Gramm to express his “grave concerns” about this aspect of the decision. *Id.* at 23. The CFTC decided not to include the removal of anti-fraud authority in the final swap agreement exemption.

<sup>100</sup>John M. Doyle, *House Chairman Slams CFTC Exemption of Off Exchange Energy Contracts*, The Associated Press, April 28, 1993.

<sup>101</sup>House June 1993 Hearing, *supra* at 101.

<sup>102</sup>*Id.* at 104–5.

emption—testified that although the Energy Group was “adamantly opposed to fraud in any market,” repealing the exemption from the anti-fraud provision would not be effective. According to these companies, the CFTC did not have the ability to regulate energy markets. “In our view, application of the CFTC’s antifraud jurisdiction only confuses the picture. The CFTC has never overseen or been involved in policing these markets. I believe that is just a critically important point. Without the staff or the expertise, retaining antifraud jurisdiction could create a misleading impression about the CFTC’s abilities.”<sup>103</sup>

The Chairman of the Chicago Board of Trade, Patrick Arbor, testified as to the higher burden of proof the various CFTC exemptions imposed for claims of fraud and manipulation in the energy markets:

Under the swaps exemption, anyone manipulating the price of an exempt swap would not violate the CEA unless that manipulation effected a ripple manipulation on a futures exchange or in the cash market as a whole. The swaps exemption also may be illusory or at least cumbersome when it comes to fraud. Any fraud action would require the complaining party to prove first that the swap is a futures contract and second that fraud occurred. Other than shielding wrongdoing, no reason exists to make the complaining party make a double showing. The energy contract exemption has the same flaw in the manipulation area as the swaps exemption and contains no antifraud provision.<sup>104</sup>

Chairman English’s bill was reported out of his subcommittee, but made it no further in the legislative process.

#### **D. The Commodity Futures Modernization Act of 2000**

##### **1. Regulatory Uncertainty Following the FTPA**

Although the Congress attempted to clarify the legal status of certain derivative and swap instruments with the passage of the FTPA in 1992, subsequent events led to continued uncertainty and renewed calls for Congressional clarification. Most of these issues concerned the regulation of financial swaps and derivatives. Calls for Congressional action intensified after a 1995 CFTC enforcement

<sup>103</sup>House June 1993 Hearing, *supra* at 121. In an exchange with Rep. Jim Nussle (R-Iowa), Mr. Raisler confirmed that the Energy Group wanted no regulation at all of energy contracts under the Federal commodity laws, regardless of the CFTC’s abilities:

Mr. NUSSLE: OK, but the bottom line though is that the real remedy that you are prescribing in the alternative of this legislation is the civil courts. You are basically saying let the buyers beware, let the market beware, and you are on your own, you take care of it on your own. You have to investigate it, you have to uncover it, you have to be aware of it, and then you have to prosecute it.

Mr. RAISLER: And let me point out, as a general matter in this country the buying and selling of goods, whether they be energy or any other kind of product, find themselves with that remedy, yes.

\* \* \*

Mr. NUSSLE: And the Government has no place regulating or monitoring that particular transaction, in your opinion?

Mr. RAISLER: The Government never has, and so we see no reason for them to start now.

*Id.* at 131.

<sup>104</sup>Statement of Patrick H. Arbor, Chairman, CBOT, Hearing *To Amend the Commodity Exchange Act to Ensure the Continued Application of the Act’s Antifraud and Antimanipulation Protections*, June 30, 1993, at 134–5 (emphasis added).

proceeding alleging market manipulation by MG Refining and Marketing, Inc. and MG Futures, Inc., in which the CFTC again sought to define “all the essential elements of a futures contract.” Although the CFTC indicated it did not intend to change the meaning of a futures contract under the CEA, and did not seek to impose new regulations upon the swaps and derivatives industry, the CFTC’s action nonetheless raised anew the concerns that these instruments could someday be declared unenforceable as illegal futures contracts.<sup>105</sup>

A “concept release,” issued by the CFTC in May 1998, to “reexamin[e] its approach to the over-the counter derivatives market” also caused alarm in the financial community.<sup>106</sup> Although the CFTC stated that the release “in no way alters the current status of any instrument or transaction” under the CEA, the industry viewed it as the beginning of an attempt to increase the CFTC’s role in regulating aspects of the OTC derivatives markets. “Until the Concept Release,” the Swap Dealers told Congress, “the CFTC appeared to have worked on the assumption that a contract is subject to their jurisdiction if they determine it to be a futures contract, and is not subject to the Act until then. But under the Concept Release, the CFTC moved to the other side and asserted that all derivatives are automatically subject to its jurisdiction, unless it affirmatively states otherwise.”<sup>107</sup> In response to objections of the financial industry, in the Agriculture Appropriations Act for fiscal year 1999, Congress imposed a 6-month moratorium on the CFTC’s rulemaking authority in this area.

The rapid development of computerized trading systems for OTC derivatives complicated the regulatory picture as well. The CFTC’s existing swap exemption only applied to swaps that were not entered into on an exchange. The question arose as to whether computerized OTC trading systems that automatically facilitated negotiations between multiple parties were more akin to the trading floor of an exchange or more like electronic communication systems, such as telephones and fax machines. To many, analysis based on such distinctions elevated form over substance. “Market participants . . . have argued that the means to execute a swap agreement (computer systems rather than telephonic systems) should not alter the regulatory status of the agreement.”<sup>108</sup>

This and other regulatory issues were addressed in the Report of The President’s Working Group on Financial Markets, Over-the-Counter Derivatives Markets and the Commodity Exchange Act, which was prepared jointly by the Department of the Treasury, the Board of Governors of the Federal Reserve System, the SEC, and the CFTC, and issued in November 1999. “A cloud of legal uncer-

<sup>105</sup> See, e.g., Statement Submitted on Behalf of The International Swaps and Derivatives Association, Inc., to the Senate Committee on Agriculture, Nutrition, and Forestry, 105th Cong., 2nd Sess., July 28, 1998. (“The possibility that some or a substantial category of privately negotiated derivatives transactions may be interpreted, even inadvertently, to be futures contracts also raises serious concerns with respect to those transactions falling outside the scope of the current or a future revised Swaps Exemption, particularly equity swaps and other swaps based on the prices of securities.”).

<sup>106</sup> *Id.*

<sup>107</sup> *Id.*

<sup>108</sup> U.S. Department of the Treasury, the Board of Governors of the Federal Reserve System, Securities Exchange Commission, and Commodity Futures Trading Commission, *Report of The President’s Working Group on Financial Markets, Over-the-Counter Derivatives Markets and the Commodity Exchange Act* (November 1999), at 14.

tainty has hung over the OTC derivatives markets in the United States in recent years,” the Report stated, “which, if not addressed, could discourage innovation and growth of these important markets and damage U.S. leadership in these arenas by driving transactions off-shore.”

The President’s Working Group issued a number of recommendations for the treatment of financial instruments, including a CEA exclusion for bilateral swap agreements between certain participants (termed “eligible swap participants”),<sup>109</sup> and a CEA exclusion for certain types of electronic trading systems involving those same participants. The Working Group was clear, however, that any exclusions from the CEA should be limited to “markets that are not readily susceptible to manipulation and that do not currently serve a significant price discovery function.” To this extent, the Report stated that the recommended exclusions “should not extend to any swap agreement that involves a non-financial commodity with a finite supply.” The Working Group explained:

Due to the characteristics of markets for non-financial commodities with finite supplies, however, the Working Group is unanimously recommending that the exclusion not be extended to agreements involving such commodities. For example, in the case of agricultural commodities, production is seasonal and volatile, and the underlying commodity is perishable, factors that make the markets for these products susceptible to supply and pricing distortions and to manipulation. There have also been several well-known efforts to manipulate the prices of certain metals by attempting to corner the cash or futures markets. Moreover, the cash market for many non-financial commodities is dependent on the futures market for price discovery. The CFTC should, however, retain its current authority to grant exemptions for derivatives involving non-financial commodities, as it did in 1993 for energy products, where exemptions are in the public interest and otherwise consistent with the CEA.<sup>110</sup>

## **2. Enactment of Commodity Futures Modernization Act**

### **a. Summary of Relevant Provisions**

In 2000, Congress enacted the Commodity Futures Modernization Act (CFMA). The CFMA overhauled the regulatory framework for financial and energy derivatives under the CEA. Consistent with the recommendations of the President’s Working Group, the CFMA sought to clarify the exclusion of various financial derivatives from the scope of the CEA, and to establish a tiered regulatory system for the commodities and derivatives within the scope of the CEA, with the degree of regulation dependent upon the type of product (such as financial, agricultural, energy or metals), the

<sup>109</sup>The “eligible swap participants” who could qualify for this exclusion would be regulated financial institutions, large corporations, certain pension funds, state and local governments, and individuals with significant assets.

<sup>110</sup>*Id.* at 16–17. In footnotes, the Working Group added that “nothing in this report should be construed to affect the scope of exemptions that are currently in effect,” and recommended the CFTC “retain its current exemptive authority for these [non-financial commodity] derivatives.”

type of market (such as designated exchanges, bilateral negotiation, multilateral negotiation, or electronic exchange), and the type of participant in the marketplace (such as retail customer, sophisticated player, or speculator). Generally, the CFMA subjects markets that restrict trading to professional traders or commercial participants and trade in products that are less susceptible to manipulation to less regulation than markets with a broader range of participants or with commodities in finite supply.

The CFMA resolved the longstanding concern regarding the legal enforceability of OTC derivatives that were not traded on an approved exchange. The CEA now provides that no swap agreement between eligible contract participants shall be unenforceable under the CEA or any other law based on a failure to comply with any exclusion or exemption from any provision of the CEA.<sup>111</sup>

A significant number of provisions in the CFMA address issues related to the regulatory treatment of a variety of financial instruments. Most of these complex provisions are not directly relevant to the issue of the regulation of energy contracts under the CEA. Accordingly, this report examines the provisions of the CFMA only insofar as they relate to or are entangled with issues regarding the regulation of energy contracts, such as those involving crude oil. Table A.2–2 provides a summary of the regulation of energy derivatives under the CFMA. Table A.2–3 identifies the key dates in the regulation of the commodity markets up to and including the enactment of the CFMA.

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<sup>111</sup> 7 U.S.C.A. § 25 (West Supp. 2002).

**Table A.2-2  
REGULATION OF FUTURES MARKETS AND OTC DERIVATIVES UNDER CFMA OF 2000**

<b>Type of Commodity Market</b>	<b>CEA Statutory Provisions</b>		<b>CFTC Regulatory Provisions</b>			
	<b>Anti-Fraud</b>	<b>Anti-Manipulation</b>	<b>Large-Trader Reporting</b>	<b>Position Limits</b>	<b>Price Limits</b>	<b>Margin Requirements</b>
<b>Agricultural</b> – Futures must be traded on approved exchanges	Yes	Yes	Yes	Yes	Yes	Yes
<b>Energy/Metals (Exempt Commodities)</b>						
• Trading on approved exchanges	Yes	Yes	Yes	Yes	Yes	Yes
• Over-the-counter trading						
• Swaps between ECPs, individually negotiated, not on a trading facility	No	No	No	No	No	No
• One-to-Many ("Enron Online"), between ECPs, not on a trading facility	Not if an ECE	6(c), 9(a)(2) 6(d), 6c, 8a,	No	No	No	No
• Many-to-Many, between ECEs on an electronic trading facility	Yes	6(c), 9(a)(2)	No	No	No	No
<b>Financial (Excluded Commodity)</b>						
• Trading on approved exchanges	Yes	Yes	Yes	Yes	Yes	Yes
• Over-the-counter trading between ECPs not on a trading facility, and trading between principals on an electronic trading facility are excluded from CEA	No	No	No	No	No	No

**Table A.2.2 : Explanation of Terms**

- **Eligible Contract Participant (ECP) (§1a(12)):** Financial institutions; regulated insurance companies; corporations with more than \$10 million in assets (or more than \$1 million if the transaction is for risk-management purposes); ERISA employee benefit plans with more than \$5 million in assets; regulated broker-dealers; qualified futures commission merchants; individuals with more than \$10 million in assets (or more than \$5 million if the transaction is for risk-management purposes); government entities; and registered investment or commodity trading advisors.
- **Eligible Commercial Entity (ECE) (§1a(11)) :**
  - (A) An ECP that is a financial institution; regulated insurance company; corporation with more than \$10 million in assets (or more than \$5 million if the transaction is for risk-management purposes); regulated broker-dealer; qualified futures commission merchant that: (i) has an ability to make or take delivery of the underlying commodity; (ii) incurs risks, in addition to price risks, related to the commodity; or (iii) is a dealer that regularly provides risk management, market-making, or hedging services; or (B) An ECP other than a natural person or State or local government that (i) regularly enters into purchase, sale, or derivative transactions in the commodity; and (ii) meets the large asset thresholds in the Act.
- **Trading Facility (§1a(33)):**
  - A physical or electronic facility or system in which multiple participants have the ability to execute or trade agreements or contracts by accepting bids and offers made by other participants that are open to multiple participants in the facility or system. Does not include a facility or system that enables participants to negotiate the terms of and enter into bilateral transactions as a result of communications between the parties and not from the interaction of multiple offers and bids through an automated trade matching system.
- **Electronic Trading Facility (§1a(10)):**
  - A trading facility that operates through an electronic or telecommunications network, and that maintains an automated audit trail of bids, offers, and the matching of orders or the execution of transactions on the facility.
- **Anti-Manipulation Provisions of the CEA:**
  - §6(c):** For manipulating or attempting to manipulate the price of a commodity, authorizes CFTC to prohibit a person from trading on approved exchanges and to issue civil penalties up to \$100,000 or triple the monetary gain from the violation, plus restitution.
  - §9(a)(2):** Makes manipulation or attempted manipulation a felony punishable by a fine of not more than \$1 million, and imprisonment for not more than 5 years.
  - §6(d):** Authorizes CFTC to issuance cease and desist orders for manipulation or attempts at manipulation.
  - §6c:** Authorizes CFTC to seek and federal district courts to issue injunctions, restraining orders, writes of mandamus to ensure compliance with the provisions of the CEA
  - §8a:** Authorizes CFTC to register future commission merchants, brokers and others under the CEA.

**Table A.2-3****Key Dates in U.S. Commodity Market Regulation**

1848	Chicago Board of Trade established.
1922	Grain Futures Act requires grain futures contracts to be traded on regulated exchanges.
1936	Commodity Exchange Act (CEA) expands law to more agricultural commodities, strengthens anti-manipulation penalties, and prohibits fraud.
1974	CEA is expanded to non-agricultural commodities. Commodity Futures Trade Commission (CFTC) is established to oversee trading.
1989	CFTC Swaps Policy Statement states CFTC will not regulate certain swaps traded "over the counter" (OTC) outside regulated exchanges.
1990	<u>Transnor</u> court finds Brent contracts are futures contracts subject to CEA; CFTC finds Brent contracts are forward contracts exempt from CEA.
1992	Futures Trading Practices Act enables CFTC to exempt energy contracts, including Brent contracts, and financial derivatives from some CEA rules.
1993	CFTC issues rule exempting certain energy contracts and financial derivatives from CEA requirement to trade on regulated exchanges and from CEA anti-fraud provisions.
1995	Sumitomo manipulation of copper market exposed.
1998	Tokyo Communiqué issued by 17 countries, including the United States, pledging to increase commodity information sharing and OTC oversight.
2000	Commodity Futures Modernization Act (CFMA) codifies exclusions and exemptions for certain energy contracts and financial derivatives from CEA and CFTC oversight.

### (i) Categories of Participants

One of the criteria used by the CFMA for determining the level of regulation under the CEA is the nature of person involved in the transaction. Generally, the Act only provides exclusions and exemptions for transactions between large institutions or individuals with large personal assets, who are either (1) deemed to be sufficiently sophisticated to be able to protect their own interest, or (2) subject to another regulatory scheme, such as the banking or securities laws. For transactions and markets in which the general public or small businesses participate, the full regulatory apparatus of the CEA still applies.

Most of the exclusions and exemptions provided by the CFMA apply to those large organizations that qualify as an “eligible contract participant” (“ECP”), the definition of which includes financial institutions; insurance companies; corporations, trusts, and partnerships with total assets greater than \$10 million; large pension benefit plans, governmental entities, natural persons with assets greater than \$5 million who are entering the transaction for risk management purposes, and certain others.<sup>112</sup>

A subset of “eligible contract participants” qualify for further exemptions and exclusions. An “eligible commercial entity” is an eligible contract participant that (i) has the ability to make or take delivery of the commodity; (ii) incurs commodity risks in addition to price risks; or (iii) is a dealer in either the commodity or derivatives transactions involving that commodity.<sup>113</sup> In essence, this category applies to large traders that make or take delivery of a physical commodity, such as, for example, energy trading companies like Enron, Williams Company, Duke Energy, and El Paso Corporation.

### (ii) Categories of Commodities.

The CFMA also created three categories of commodities.

“Excluded commodities” are a variety of financial derivatives, including interest rate, currency, equity, debt, credit, weather, economic index, and other derivatives based on one or more commodities for which there is no cash market or whose price levels are not within the control of any party to the transaction.

Under the CEA as amended by the CFMA, an “exempt commodity” is “a commodity that is not an excluded commodity or an agricultural commodity.”<sup>114</sup> This category includes, for example, metals and energy products.

The third category of commodities is “agricultural commodities.” Although it is used in the definition of “exempt commodity,” the term “agricultural commodity” is not defined. Logically, it refers to the list of agricultural commodities traditionally within the jurisdiction of the CEA under section 1a of the Act. It is unclear, however, whether or not the term encompasses any additional agricultural commodities. Generally, the regulatory framework for the futures markets for agricultural commodities was not altered by the CFMA.

<sup>112</sup>The CFMA’s definition of ECP is based upon the CFTC’s definition of “eligible swap participant” used for the 1993 swap exemption, but is slightly broader. See 17 CFR Part 35.

<sup>113</sup> 7 U.S.C.A. § 1a(11) (West Supp. 2002).

<sup>114</sup> 7 U.S.C.A. § 1a(14) (West Supp. 2002).

### (iii) Excluded OTC Derivative Transactions

Section 2(d) excludes from the CEA all agreements, contracts, and transactions in “excluded commodities” between “eligible contract participants” that are not executed on a “trading facility.”<sup>115</sup> A “trading facility” is defined as a physical or electronic exchange.<sup>116</sup> Roughly speaking, this section excludes from the CEA financial derivatives that are traded over-the-counter, not on an approved futures exchange, among large institutions or corporations.

### (iv) Excluded Swap Transactions

Section 2(g) excludes from the CEA all agreements, contracts, and transactions “in a commodity other than an agricultural commodity” between “eligible contract participants” that are individually negotiated by the parties and that are “not executed or traded on a trading facility.”<sup>117</sup> These are referred to as “excluded swap transactions.” Unlike the provision excluding certain OTC derivative transactions, which applies only to excluded commodities, which are basically financial in nature, this provision applies to all commodities other than agricultural commodities, which means that agreements, contracts, and transactions in energy and metals individually negotiated, not on an exchange, by large corporations and institutions can qualify for the exclusion for swap transactions.

### (v) Transactions in Exempt Commodities: Section 2(h)

Section 2(h)(1) of the CEA was meant to exempt from regulation dealer markets and facilities, such as “Enron Online,” in which one organization acts as the counterparty to many or all of the other participants in the market. Section 2(h)(1) provides that all agreements, contracts, and transactions in an “exempt commodity”—which includes energy and metals—between “eligible contract participants” and “not entered into on a trading facility” are generally exempted from the requirements of the CEA. Unlike the swap transaction exclusion, this exemption applies even if the agreement, contract, or transaction is not individually negotiated.

Some of the CEA provisions, including anti-fraud and anti-manipulation provisions, still apply to most of these transactions. However, the agreements, contracts, and transactions in these commodities between “eligible commercial entities”—meaning those eligible contract participants that can make or take delivery, incur commodity risks, and are commodity dealers—are not subject to the CEA anti-fraud provisions. This special exemption from the CEA anti-fraud provisions essentially codifies the CFTC’s 1993 energy contract exemption from the exchange-trading and anti-fraud provisions of the CEA.

<sup>115</sup> 7 U.S.C.A. § 2(d)(1) (West Supp. 2002). Section 2(d)(2) provides a further exclusion for certain “principal-to-principal” transactions in excluded commodities on an electronic exchange. *Id.*

<sup>116</sup> “The term ‘trading facility’ means a person or group of persons that constitutes, maintains, or provides a physical or electronic facility or system in which multiple participants have the ability to execute or trade agreements, contracts, or transactions by accepting bids and offers made by other participants that are open to multiple participants in the facility or system.” 7 U.S.C.A. § 1a(33) (West Supp. 2002). An “electronic trading facility” is a trading facility that “operates by means of an electronic or telecommunications network” and maintains an audit trail of bids, offers, orders, and transactions on the facility. *Id.* at § 1a(10).

<sup>117</sup> 7 U.S.C.A. § 2(g) (West Supp. 2002).

Section 2(h)(3) is designed to allow large market participants to trade amongst themselves on electronic trading facilities with little government oversight. This section provides an exemption for agreements, contracts, and transactions involving “exempt commodities,” such as energy or metals, that are executed or traded on an “electronic trading facility,” and entered into on a principal-to-principal basis between “eligible commercial entities.”

A reduced number of CEA provisions apply to transactions on these facilities. For example, a number of the CEA’s statutory proscriptions against manipulation apply to these transactions. The proscription against fraud in connection with commodity option transactions applies as well. These facilities must keep trading records for 5 years, make such records available for inspection by the CFTC, and provide other data upon “special call” by the CFTC. In addition, if the CFTC determines that the facility performs a significant price discovery function for the underlying commodity, the facility must disseminate price, volume, and other trading data in a timely manner as the CFTC determines is appropriate. The CFTC has not yet proposed a rule to implement this provision of the CFMA.

One of the sources of confusion following the passage of the CFMA is the inconsistency between sections 2(g) and 2(h)(1)—whereas § 2(g) totally excludes energy and metals swaps that are individually negotiated from the CEA, § 2(h)(1) exempts energy and metals transactions from the exchange-trading and other requirements but generally applies the anti-fraud and anti-manipulation provisions to over-the-counter transactions in these commodities. It is not clear whether the exclusion provision takes precedence over the exemption provision, or vice versa.

Moreover, to the extent that a negotiation over price can be considered “an individual negotiation,” it would appear that sections 2(g) and 2(h)(1) cover the same transactions and are in direct conflict regarding the applicability of the CEA’s anti-fraud and anti-manipulation provisions. The CFTC staff has told the Subcommittee staff that the CFTC interprets the term “individual negotiation” to include price negotiations; under this interpretation there is no difference between sections 2(g) and 2(h)(1). Under this interpretation, all instruments traded under 2(h)(1) on “one-to-many” facilities or through dealer-brokers could be considered excluded swaps.

### **b. Outstanding Issues**

The CFMA created a complex statutory and regulatory scheme that perpetuates different degrees of CFTC oversight for energy contracts, swaps, and other derivatives, depending on the size of the parties to the transaction and the type of market in which the contracts are traded. As other parts of this Report demonstrate, however, as the risk-transference and price discovery functions of the over-the-counter markets and approved futures exchanges have become increasingly intertwined, these distinctions make less and less sense. It hardly makes sense to allow participants to operate in one market in a manner that is not allowed in another.

Moreover, as other parts of this Report demonstrate, the operation of both the OTC markets and the approved futures exchanges

can have significant impacts upon consumers and businesses that may not trade at all on either market. Both markets perform a vital economic function for the American economy as a whole, and the behavior of the participants in these markets affects not only other market participants, but potentially millions of persons outside of those markets. Whether or not large institutions need or desire governmental oversight to protect themselves from each other, governmental oversight is necessary to ensure the markets are operating efficiently and effectively in the public interest. Accordingly, as the OTC energy markets now perform economically identical functions to the designated futures exchanges trading energy contracts, the distinctions created in the CFMA between large institutions and other types of traders, and between OTC markets and approved futures markets, no longer is sound public policy.

**APPENDIX 3: EXHIBITS**

**EXHIBIT II-1**

**Strategic Petroleum Reserve**



**Business Procedures**

**Crude Oil Exchanges**

**SPRPMO 0015**

**January 2002**

## **INTRODUCTION**

The Energy Policy and Conservation Act authorizes the Strategic Petroleum Reserve (SPR) to acquire oil by use of exchanges. The SPR has exercised this authority in two different ways over the last several years. First, crude oil from the Reserve is exchanged for a larger quantity and/or better quality of crude oil. Second, crude oil owed to the Government as royalty under Federal leases, administered by the Minerals Management Service of the Department of Interior, is exchanged for oil to be delivered to the SPR. These latter exchanges are commonly referred to as the Royalty-In-Kind (RIK) Program

Although the Federal Acquisition Regulation, the Department of Energy Acquisition Regulation, and the SPR Standard Sales Procedures do not govern the SPR crude oil exchanges, many of their underlying contracting principles are applicable. Within this context, these procedures outline the business framework for the SPR crude oil exchange activities.

## **SOLICITATION**

### 1) Development of Source List

The email notification list for notifying firms of exchange solicitations is established by compiling selected names of firms listed on the Sales Offer Mailing List developed for drawdown; firms expressing interest or awardees on previous exchange solicitations; and telephone requests for inclusion on the email notification list.

### 2) Preparation

- i) The Acquisition and Sales Division (A&SD) initially develops a tentative schedule for solicitation milestones. Coordination with the Program Office's (PO) Operations and Readiness Office, and the Project Management Office (PMO) Crude Oil, Drawdown Readiness, and Cavern Integrity Division (Crude Oil Division) is conducted to finalize the solicitation schedule prior to submission for review and approval by the PMO Project Manager.
- ii) A&SD develops the boilerplate solicitation and incorporates logistical information from the Program Office, Crude Oil Division, Planning and Financial Management Division (Finance) and DynMcDermott's Crude Oil Logistics (DMCOL) organization. This information includes site specific scheduling of crude oil receipts;

special requirements such as site and quality constraints; quantity determinations; and any other pertinent information necessary to provide potential offerors as much information as is available.

3) Review and Approval

The A&SD coordinates final review with and obtains concurrence from the Director, Acquisition and Sales Division, the APM for M&A, PO, Crude Oil Division, Finance and Legal counsel. Once the solicitation has been finalized, required coordination completed and concurrences obtained, the PMO Project Manager authorizes the release of the solicitation, which is issued via posting on the SPR web page.

4) Issuance of Solicitation

A&SD coordinates with the PMO Information Systems and Technical Services Division (IS) for posting of the solicitation on the SPR web page. IS also establishes an email address for submission of questions pertaining to the solicitation. A&SD, Crude Oil Division, Finance, Legal Counsel, PO and DMCOL coordinates responses to questions submitted concerning the solicitation and A&SD posts questions and answers on the web page.

5) Major Business Considerations

i) Offer Guarantee

Offerors are required to provide an acceptable offer guarantee Letter of Credit (LC) with their offer(s) (amount determined to be sufficient to protect the Government's interest will be stipulated in the solicitation). Rational for determination of LC amount will be documented in the solicitation file. This offer guarantee shall be in the form of an irrevocable standby letter of credit from a U.S. depository institution located in and authorized to do business in the U.S., established in favor of the U.S. Department of Energy and must be valid for at least 30 calendar days. The offer guarantee ensures that 1) the offeror must abide by its offer for the stipulated offer period and 2) protects the Government from damage should contractor fail to provide an acceptable performance letter of credit after contract award.

### Performance Guarantee

Performance guarantees are required after contract award (normally within five business days) in an amount determined by the terms and conditions set forth in the contract. The LC amount shall be sufficient to protect the Government's interest and the rationale for determination of LC amount will be documented in the contract file. The performance guarantee shall be in the form of an irrevocable standby letter of credit from a U.S. depository institution located in and authorized to do business in the U.S. and established in favor of the U.S. Department of Energy. The Performance Guarantee is established to protect the Government from 1) default of the contractor to deliver amounts of crude oil owed the Government, or 2) failure of the contractor to make final reconciliation payment to the Government.

### ii) Evaluation Criteria

Evaluation criteria are developed with coordination of A&SD, Crude Oil Division, PO and DMCOL personnel prior to receipt of offers. The criteria will be structured to facilitate expeditious evaluation of offers. Evaluation criteria are developed based on best value to the Government considering the return ratio offered and the value of the oil being offered in exchange. Specific factors could include site storage requirements, oil quality, oil quantity, return schedule, and logistics (e.g. transportation, terminalling, etc.).

### iii) Closing Date

The closing date for the solicitation usually is established as two weeks (14 days) from issuance. However, this duration period could change should there be programmatic reasons such as collaboration with Mineral Management Service requirements.

## **EVALUATION AND AWARD**

### 1) Evaluation Procedures

Following receipt of timely offers at closing, A&SD conducts an initial review to determine if each offer has an offer guarantee, required certifications, completed offer form and signed contract form. Failure to provide required documentation with offer may result in rejection of the offer as nonresponsive. A&SD also forwards offer

documentation to the Office of Chief Counsel for legal sufficiency review and forwards offer guarantee(s) to the Planning and Financial Management Division (Finance) for determination of acceptability.

An evaluation team led by the Crude Oil Division and consisting of personnel from A&SD, PO, and DMCOL, as well as support from crude oil industry consultant(s), conducts a review of the responsive offers. The team evaluates each offer using the evaluation criteria established in the solicitation.

#### 2) Responsibility Determination

Upon receipt of offers a review is conducted by A&SD to determine the responsibility of companies submitting an offer. Although the offer submits an offer guarantee this alone does not determine a company responsible for the purpose of fulfilling the requirements of the contract. Other factors used in making this determination include whether the firm is considered a regular seller, purchaser or trader of crude oil; demonstrated oil movement experience; and has the financial capability to perform in accordance with the terms of the contract. The last may require a financial review of the firm, including a credit check (e.g., a Dun & Bradstreet report).

#### 3) Offer guarantee review

Upon receipt at solicitation closing, A&SD forwards offer guarantee LCs to Finance for review of acceptability of financial institutions, accuracy in format and amount, and proper signatures with acceptable backup documentation pursuant to the SPR Business Process for Handling Letters of Credit procedures. Finance confirms acceptability or identifies discrepancies in offer guarantees and coordinates with Legal Counsel. Notification by Finance is provided A&SD via email concerning acceptability of LCs. Minor informalities in the offer guarantees will be resolved by A&SD and the offeror. Failure in the timely correction of offer LC will result in offer being rejected.

#### 4) Written or oral discussions

The evaluation team will review each offer utilizing evaluation criteria established to determine reasonableness. Offers determined to be reasonable and acceptable will be awarded base on initial offers without discussions provided that the Contracting Officer has made a favorable determination of responsibility. However, if no awards or

only partial award of available Royalty Oil is made on initial offers, a determination will be made by the Contracting Officer for conducting discussions with firms submitting offers that could be made acceptable. Since crude oil quotes are time sensitive normally oral discussions are conducted.

5) Review and approval

Upon completion of discussions and/or determination of reasonableness of initial or final offers the evaluation team briefs the PO and PMO senior staff. Based on this briefing a determination of final approval is made. All proposed crude oil exchange awards over \$1,000,000 require the prior approval of the Project Manager, which will typically be done via email to the Contracting Officer.

6) Award

Upon notification of final approval the Contracting Officer signs the contract form and notifies the awardees. Copies of the award documents will be forwarded to the awardees as well as internal distribution.

**CONTRACT ADMINISTRATION**

1) Review and approval of performance guarantee

Performance guarantee LCs are required after award of the contract (normally within five business days). Upon receipt by A&SD performance guarantees are forwarded to Finance for a review of acceptability. Finance reviews acceptability of financial institutions, accuracy in format and amount, and proper signatures with acceptable backup documentation pursuant to the SPR Business Process for Handling Letters of Credit procedures. Finance notifies A&SD of approval or identification of discrepancies (after coordination with Legal Counsel) of each performance guarantee via email. The Contracting Officer notifies contractors of discrepancies and provides an opportunity to make the LCs acceptable. Failure to provide an acceptable LC will result in a termination of the contract and the Offer Guarantee LC will be drawn upon for any subsequent damages to the Government.

## 2) Contract Modifications

### i) Deferrals or accelerations

During contract performance there may be situations when due to programmatic requirements or through contractor request the schedule for the delivery of exchange oil to the SPR sites are proposed to be deferred to a later date or accelerated to an earlier date. An evaluation is performed incorporating a formula that encompasses market conditions including crude oil prices from contracted delivery period to the revised delivery period, time value of money and crude type differentials. Based on this evaluation negotiations are conducted with the contractor with a team consisting of A&SD, Crude Oil Division, PO and DMCOL personnel. Based on the negotiated agreement a bilateral modification is executed by AS&D and the contractor incorporating the revised delivery schedule; any additional premium barrels owed by the contractor as a result of the agreement; and the requirement for an amended LC (normally due within five business days) extending the expiration date and/or the value of the LC, as applicable. Coordination with Finance on the revised LC will be performed upon receipt.

### ii) Quantity or quality adjustments

Due to potential variances in cargo volumes and/or quality variances of crude oil received at the SPR sites, contract provisions allow for adjustments for these variances. Based on DD250s or DD250-1s the contractor may owe additional barrels as a result of the under delivery of contracted amounts. Depending on the amount of the shortage the contractor may owe the Government interest, which is computed in accordance with the terms of the contract. In addition, the contract provides quality variance payment adjustments for crude oil determined by analysis to not meet contractual requirements. Payment is requested in the form of additional barrels unless it is not feasible due to insufficient quantities, then monetary payment is required.

## iii) Performance guarantee monitoring and adjustments

A&SD forwards all original performance guarantee LCs to Finance where they are maintained in a secure container. Finance maintains and updates on a monthly basis a spreadsheet identifying all exchange contractors, contract monetary value, LCs associated with each, and sufficiency of each LC to the contract value. Briefings are made to Senior Staff as necessary concerning the status of guarantees under the exchange contracts. The Contracting Officer shall immediately notify (via email) the Assistant Project Manager for Management and Administration and the Project Manager when a performance guarantee does not meet contract requirements or will expire prior to final delivery.

Based on contract value increase due to additional barrels for deferral or acceleration considerations the amount or period of coverage of the LC may be revised. Upon receipt of the revised LC A&SD forwards the original to Finance.

## iv) Reviews and approvals

Modifications to exchange contracts are coordinated with senior staff, Crude Oil Division, DMCOL and PO prior to execution. Copies of all modifications are provided to Finance, Crude Oil Division, DMCOL and PO. Modifications over \$1,000,000 or that impact delivery dates by more than 30 days require the prior approval of the Project Manager, which typically will be done via email to the Contracting Officer.

## 3) Deliveries

Exchange oil delivered to the SPR sites undergoes API gravity, quality and Sediment and Water tests to determine delivered quantity. Quantity measurements are performed and certified by the Government's representative at the delivery point. Also, title to the crude oil is transferred to DOE at the custody transfer measurement locations specified in the exchange contract.

Within 30 days after contract award, the Contractor(s) are required to submit a monthly delivery schedule to each SPR delivery location to the Contracting Officer for approval. This delivery schedule may allow for economic delivery-size marine cargos and/or commercial

pipeline batch shipments (not less than 50,000 barrels per batch), to be spaced within the constraints of the SPR site receipt capabilities. The Contracting Officer must approve any changes to the original delivery schedule.

### **CONTRACT CLOSEOUT**

After completion of the final scheduled delivery under the contract an inventory closeout reconciliation is conducted to determine if any imbalances exist between quantity due and what was delivered. If in the final analysis the SPR owes the contractor a monetary settlement, Finance, with the proper approvals within the SPR, will notify the U.S. Treasury for disbursement. Should, after final analysis, the contractor owes the SPR an amount which is insufficient to pay in additional crude oil, Finance will submit an invoice to the contractor for the value of the crude oil owed. Should the contractor fail to pay in the specified time the amount will be drawn for the contractor's LC. This procedure also applies to quality differential imbalances. Upon the satisfactory completion of all terms and conditions of the contract the contractor's LC is returned to the issuing financial institution.

The value of the crude oil imbalance is determined by data published on the Platt's Oilgram Price Report and the Average Freight Rate Assessment valued on the last delivery date.

### **FINANCIAL ACCOUNTING**

#### 1) Accounts Receivable

For RIK accounts receivable, the quantities owed are recorded at current market value for the type of crude involved (i.e., sweet or sour). Amounts outstanding at the end of each fiscal year are adjusted to reflect current market value at that point in time. For exchanges of oil from the Reserve, the portion of the quantity owed that matches the quantity delivered from the SPR is recorded at the value assigned to that oil when it was stored in the Reserve. The quantities owed that are in excess of the quantities delivered from the SPR (i.e., premium portion) are recorded at current market value. At the end of each fiscal year, the outstanding premium portions are adjusted to reflect the current market value at that point in time. The accounts receivable are appropriately reduced as deliveries are made to the SPR. The SPR Business Process – Oil Inventory desktop procedure details steps for recording and reporting accounts receivables.

**2) Inventory valuation**

RIK inventory is valued by multiplying the number of barrels received by the market price for the date of receipt. Oil Exchange barrels received are valued at same cost per barrel as the SPR delivered value. Any oil inventory gains are recorded at the market price for the date of receipt. The SPR Business Process - Oil Inventory desktop procedure is used to record monthly oil inventory receipts into the accounting system.



**STRATEGIC PETROLEUM RESERVE**

**APEC WORKSHOP ON ENERGY SECURITY  
POLICY**

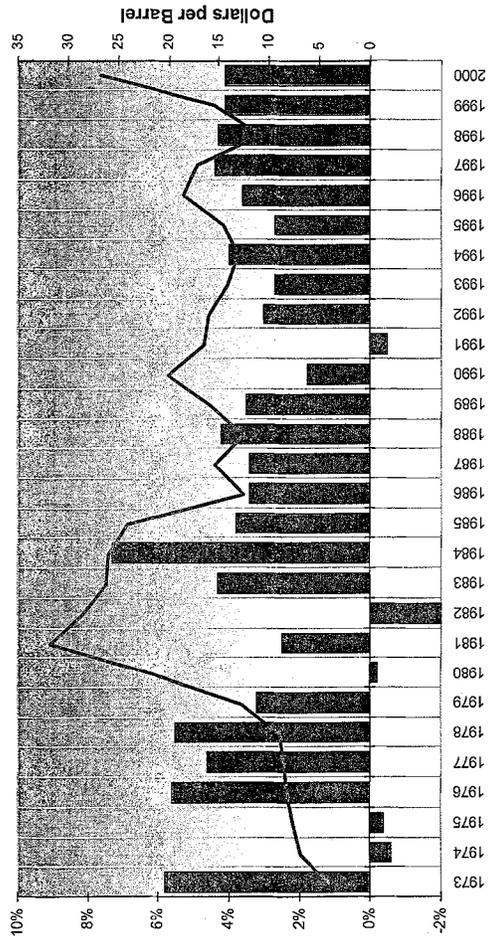


**John Shages**

**EXHIBIT II-2**



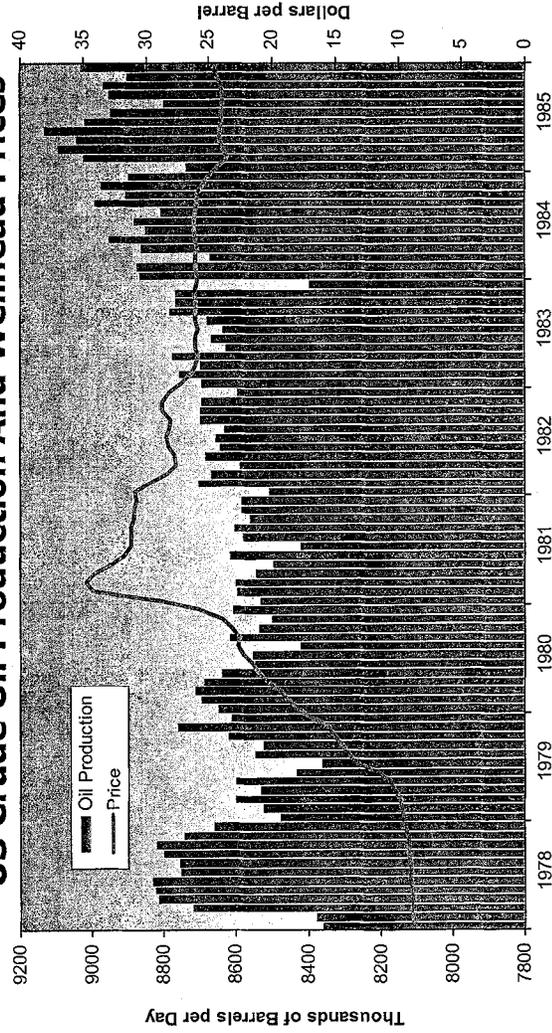
## Gross Domestic Product Percent Change From Preceding Period (Seasonally Adjusted Annual Rates)



SFR25701.ppt



### US Crude Oil Production And Wellhead Prices





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## **United States Policy on Responding to Oil Supply Disruptions**

207

- The policy of the United States regarding oil supply disruptions is to rely on market forces to allocate supply, and to ordinarily supplement supply by the early drawdown of the Strategic Petroleum Reserve in large volumes and in coordination with our allies and trading partners.



## Critical Elements to Justify a Drawdown

208

- A Disruption Event
- Evidence of Supply Stress
- A Price Spike



## **The Key To A Successful Strategic Reserve Is Cost Control**

- The benefits come with a drawdown – but the number and extent of futures disruptions is unknown.
- Measuring the degree of damage from a disruption, and the consequent benefits of a petroleum reserve, to an individual economy is an uncertain science.
- Cost is the easiest aspect to control and has the highest probability of making the Reserve cost beneficial.



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## Major Cost Elements

- Capital Costs — Including land, facilities, and logistics systems.
- Maintenance Costs
- Oil Acquisition Costs



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## Capital Costs

- Dependent on location.
- Technology and type of storage facilities.
- Refer to the 1999 APERC Study supported by conceptual designs and cost estimates from PBKBB, Inc.



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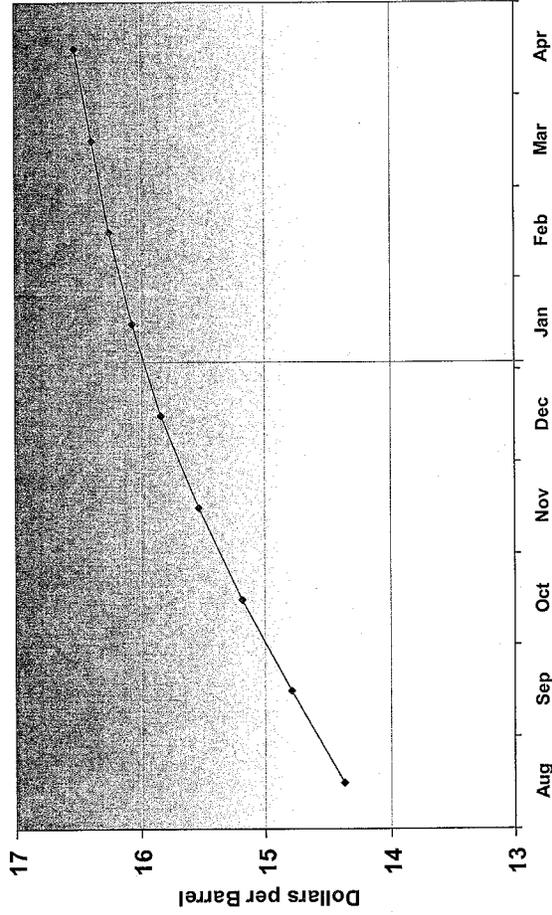
## **Lessons Learned to Control Oil Acquisition Costs**

212

- Let the markets determine your buying pattern.
- Buy in weak markets.
- Delay deliveries during strong markets.
- Use your acquisition strategy to stabilize markets.



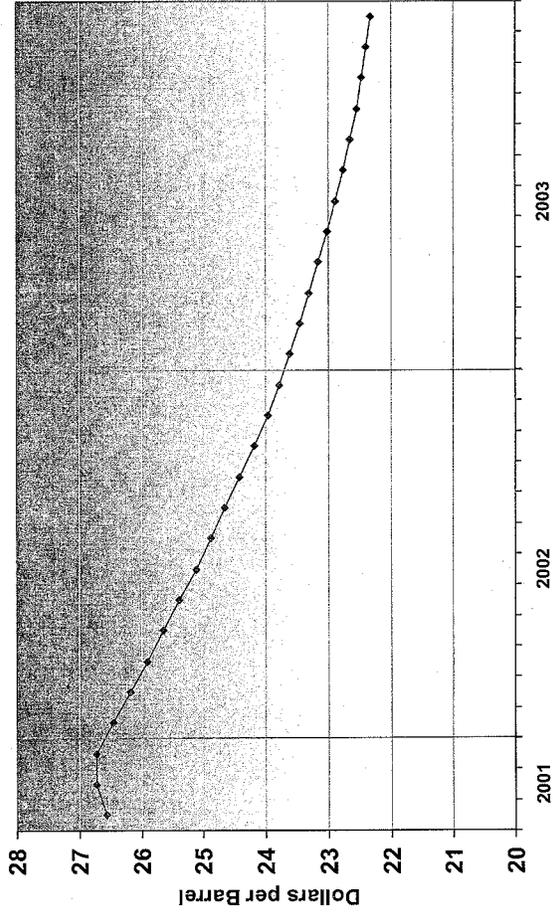
### Example of "Contango" Futures Market NYMEX July 1, 1998 Closing Prices



SPR62670.ppt



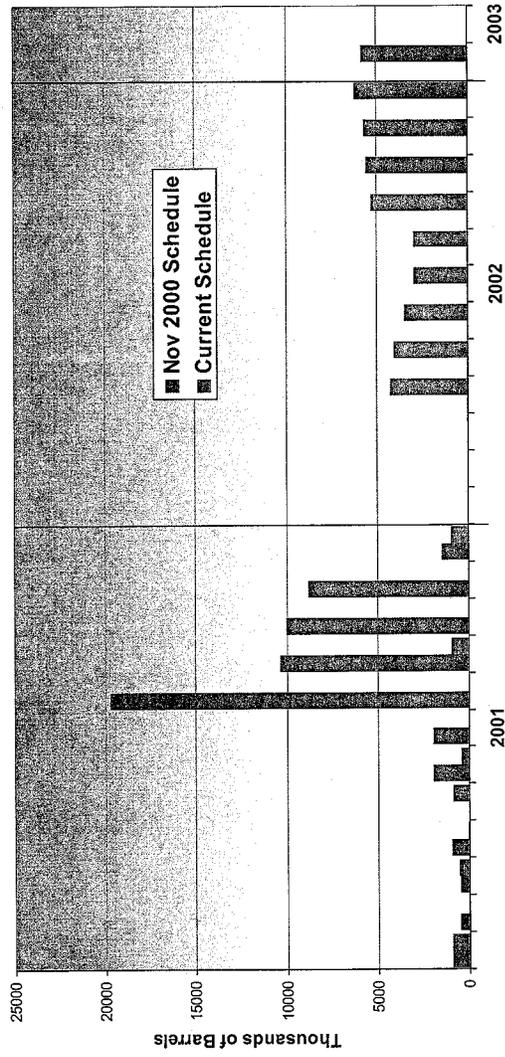
### Example of "Backwardated" Futures Market NYMEX August 30 Closing Prices



SPR2670.ppt

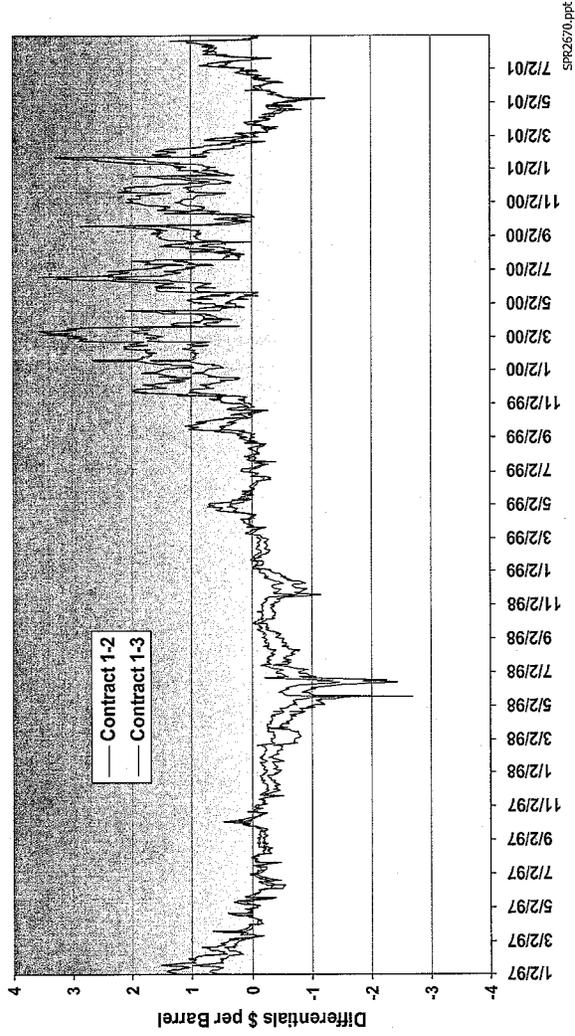


## SPR Delivery Schedule





### NYMEX Price Differentials Near Month vs. One and Two Month Later



SP62670.ppt



### West Texas Sour Crude Oil Futures

- Contract Detail
- Description
- Specification
- Margins
- Settlements
- Terms & Conditions
- ClearPort™ Overview
- Other Products

**Contract Unit:**  
1,000 barrels.

**Price Quotation:**  
U.S. dollars and cents per barrel

**Business Hours:**  
Trades may be entered on the Exchange OTC website for clearing Monday through Friday, between the hours of 7:30 A.M. and 2:30 P.M., New York time.

**Trading Venue:**  
Over-the-counter

**Listed Months**  
The contract is listed for up to 18 months

**Termination of Trading:**  
Third business day prior to the 25th calendar day of the month preceding the contract month. If the 25th calendar day is a non-business day, trading terminates on the third day prior to the last preceding business day.

**Settlement Type:**  
Physical delivery at Midland, Texas.

**Trading Symbol:**  
TS

[signing ceremony](#)  
[-> Exchange Sets Record for NYMEX Division Seat Sale](#)

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Light Louisiana Sweet Crude Oil Futures

- Contract Detail
- Description
- Specifications
- Margins
- Settlements
- Terms & Conditions
- ClearPort™ Overview
- Other Products

**Contract Unit:**  
1,000 barrels

**Price Quotation:**  
U.S. dollars and cents per barrel.

**Business Hours:**  
Trades may be entered on the Exchange OTC website for clearing Monday through Friday, between the hours of 7:30 A.M. and 2:30 P.M., New York time.

**Trading Venue:**  
Over-the-counter

**Listed Months:**  
Up to 18 months.

**Last Trading Day:**  
Third business day prior to the 25th calendar day of the month preceding the contract month. If the 25th calendar day is a non-business day, trading terminates on the third day prior to the last preceding business day.

**Settlement:**  
Physical delivery at St. James, Louisiana.

**Trading Symbol:**  
LS

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**Hunt, Edith****EXHIBIT V-1**

**From:** Kateiva, George  
**Sent:** Wednesday, March 20, 2002 3:13 PM  
**To:** COMMS  
**Subject:** FW: BP Deferral Email

-----Original Message-----

**From:** Callahan, David  
**Sent:** Wednesday, March 20, 2002 8:52 AM  
**To:** Waggoner, Michael; Shourbaji, Nabil; Marland, Nancy (HQ); Gaillard, Rose; Kateiva, George; Habbaz, Roy  
**Cc:** Gibson, Hoot; McWilliams, Michael; Landry, Gary  
**Subject:** RE: BP Deferral Email

It would help our May-July schedule, but it would impact anything in the future. Don't see the need to defer now. Above based on the total amount owed. If we could move one cargo out of each of the months, that would help. See no change in the no deferral policy unless the price of oil increases. Recommend saying thank you, but not at the present time.

-----Original Message-----

**From:** Waggoner, Michael  
**Sent:** Wednesday, March 20, 2002 8:33 AM  
**To:** Callahan, David; Shourbaji, Nabil; Marland, Nancy (HQ); Gaillard, Rose; Kateiva, George; Habbaz, Roy  
**Cc:** Gibson, Hoot; McWilliams, Michael; Landry, Gary  
**Subject:** BP Deferral Email

Interest?

-----Original Message-----

**From:** Dyer, James T [mailto:DyerJ2@bp.com]  
**Sent:** Monday, March 18, 2002 1:02 PM  
**To:** Waggoner, Michael  
**Subject:**

Mike

I know some time ago we discussed deferral of the current exchange barrels and you said that you no longer had any interest in this. Is this still the case? It appears that if we deferred the balance of our volume a year we could deliver another 500 kb or so, this also would defer the volume until after the RIK barrels, hence easing logistical issues. Also I wonder whether the politicians might be keen given the rise in prices that we are currently seeing.

Let me know if this is of interest.

rgds

Hunt, Edith

**EXHIBIT V-2**

From: Kateiva, George  
 Sent: Monday, March 25, 2002 6:49 AM  
 To: COMMS  
 Subject: FW: BP Deferral Email

-----Original Message-----

From: Marland, Nancy (HQ)  
 Sent: Thursday, March 21, 2002 10:50 AM  
 To: Callahan, David; Waggoner, Michael; Shourbaji, Nabil; Marland, Nancy (HQ); Gaillard, Rose; Kateiva, George; Habbaz, Roy  
 Cc: Gibson, Hoot; McWilliams, Michael; Landry, Gary  
 Subject: RE: BP Deferral Email

Deferrals in general were discussed in our PR staff meeting this morning, with Hoot in attendance. John Shages said he wanted to discuss with the National Security Council to make sure he understood what the White House's reaction would be if prices were to go up to the politically sensitive level of \$30/bbl or so. I think the issue is not totally closed and will be discussed further by management.

-----Original Message-----

From: Callahan, David [mailto:David.Callahan@SPR.DOE.GOV]  
 Sent: Wednesday, March 20, 2002 9:52 AM  
 To: Waggoner, Michael; Shourbaji, Nabil; Marland, Nancy (HQ); Gaillard, Rose; Kateiva, George; Habbaz, Roy  
 Cc: Gibson, Hoot; McWilliams, Michael; Landry, Gary  
 Subject: RE: BP Deferral Email

It would help our May-July schedule, but it would impact anything in the future. Don't see the need to defer now. Above based on the total amount owed. If we could move one cargo out of each of the months, that would help. See no change in the no deferral policy unless the price of oil increases. Recommend saying thank you, but not at the present time.

-----Original Message-----

From: Waggoner, Michael  
 Sent: Wednesday, March 20, 2002 8:33 AM  
 To: Callahan, David; Shourbaji, Nabil; Marland, Nancy (HQ); Gaillard, Rose; Kateiva, George; Habbaz, Roy  
 Cc: Gibson, Hoot; McWilliams, Michael; Landry, Gary  
 Subject: BP Deferral Email

Interest?

-----Original Message-----

From: Dyer, James T [mailto:Dyer.J2@bp.com]  
 Sent: Monday, March 18, 2002 1:02 PM  
 To: Waggoner, Michael  
 Subject:

Mike

I know some time ago we discussed deferral of the current exchange barrels and you said that you no longer had any interest in this. Is this still the case? It appears that if we deferred the balance of our volume a year we could deliver another 500 kb or so, this also would defer the volume until after the RIK barrels, hence easing logistical issues. Also i wonder whether the politicians might be keen given the rise in prices that we are currently seeing.

Let me know if this is of interest.

rgds

Hunt, Edith

**EXHIBIT V-3**

**From:** Kateiva, George  
**Sent:** Monday, April 01, 2002 9:43 AM  
**To:** DMCOL  
**Subject:** FW: BP Deferral Request

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

FYI

-----Original Message-----  
**From:** Waggoner, Michael  
**Sent:** Monday, April 01, 2002 9:34 AM  
**To:** Callahan, David; Shourbaji, Nabil; Kilroy, John; Marland, Nancy (HQ); Kateiva, George; Habbaz, Roy; Gaillard, Rose  
**Cc:** Gibson, Hoot; McWilliams, Michael; Landry, Gary  
**Subject:** FW: BP Deferral Request

FYI

-----Original Message-----  
**From:** Dyer, James T [mailto:DyerJ2@bp.com]  
**Sent:** Monday, April 01, 2002 9:18 AM  
**To:** Waggoner, Michael  
**Subject:**

Morning Mike.

Happy Easter!!! I know that you said last week that the government would have no interest in deferring the exchange barrels but the oil price does keep rising. As of this morning we calculate a years deferral would be worth an extra 750,000 bbls to you.

I'm not trying to bug you on this, but just wanted to make sure you knew of the opportunity.

Regards

**EXHIBIT V-4**

## Options for Filling the Strategic Petroleum Reserve

Background: After the events of September 11, 2001, President Bush determined that the Strategic Petroleum Reserve should be filled to its capacity primarily using royalty oil from Federal leases on the Outer Continental Shelf. The SPR Office is taking royalty oil from leases and additionally is taking deliveries of oil from earlier phases of a royalty oil transfer program and oil being returned from the September 2000 exchange of 30 million barrels.

Thirty six million barrels of oil are scheduled for deliveries in specific months from June 2002 through April 2003. Because of additional transfers from the Department of Interior, another million barrels per month will be added from November 2002 through April 2003. Beginning May 2003, deliveries will be stable at around 3.5 million barrels per month, based on the expected rate of transfers from DOI.

Although contractual schedules are fixed, the Government has latitude to renegotiate the delivery dates, thereby creating policy options. Prior to the events of September 11, 2001, the SPR Office routinely renegotiated delivery dates. The business model of trading more delivery time for increased volumes of oil was characterized by reduced costs, conformance with normal private sector practices, logistical flexibility to accommodate busy terminals or maintenance requirements at the sites, and acceptance by all of the companies with contracts. In February 2002, the SPR Office received a request to defer deliveries of 9 million barrels of oil for a year. The initial offer of extra oil in consideration of the deferral was valued at \$18 million. In order to stay in conformance with the President's highest priorities, the SPR Office asked the Administration for guidance prior to negotiating for this deferral, and the Secretary after conferring with the White House announced we were planning to take oil deliveries on schedule without deferrals. The reasoning for turning away from a successful business model was not made public, however, the most plausible explanation is a desire to have as much oil in the SPR as fast as possible for national security or energy security reasons.

## Options

Add Oil to the Reserve as It Becomes Available Under Contract

The most straightforward option is to take delivery of all oil owed to the SPR according to contract schedules and to inject it as it becomes available. Its primary appeal is that inventory increases every month and inventory will be at the highest possible level at every moment (absent funds to buy oil) until the Reserve is filled in early 2005.

The primary criticisms of this option are:

It ignores market signals: The SPR doggedly adds oil to the Reserve, not slowing for high prices nor accelerating to take advantage of low prices. This leads to a high average cost per barrel, and does not take advantage of a chance to reduce the budget deficit.

It ignores economic conditions: Whatever impact the acquisition process has on prices, it is allowed to happen whether the economy is robust or bordering on recession.

It is not consistent with a high sense of urgency to fill the Reserve, since the option of buying oil using appropriated funds could fill the Reserve to capacity much faster.

#### Alternative Fill Rate Rules

There are many variations on the theme of accelerating acquisition when prices are low and slowing when prices are high. Through 2001, the SPR Office assessed offers from contractors, and if the offers gave enough of the market value of the deferral to the Government, the offers were accepted.

There are a number of criticisms of this option:

**Market interference:** If the Government does not follow a simple rule for acquisition, it will be actively influencing prices. Even if this activity were not objectionable in principle, the fill rate of the SPR is too little to have more than marginal impacts on price.

**Lack of economic impact:** Even if the acquisition increased price, the change is insufficient to effect macroeconomic conditions, and, therefore, this should not be a consideration.

**Delayed fill:** We should get as much oil in the Reserve as rapidly as possible. Alternatives that potentially postpone fill are dangerous for the primary objective.

#### Main Areas of Debate

**Markets and Government Participation:** The SPR Office acknowledges the concern that the Government should not manipulate the market, and asserts its normal business practice does not manipulate the market, but instead conforms with the goal of the Energy Policy and Conservation Act that the acquisition should minimize impact on market forces.

Crude oil markets are free to move according to the dictates of many players, however, they are not perfectly free markets. OPEC members and exporting countries cooperating with OPEC and Iraq are colluding to set production volumes and prices. If controlled prices were always high, low, or consistent there would be offsetting benefits to this interference in the market. Instead, OPEC *et al* act erratically, sometimes driving prices low to make high-cost U.S. oil production uneconomic as occurred in 1998. At other times prices are kept too high and hinder economic growth, as in 2000 and 2001. Despite OPEC's contention that it is seeking price stability, history suggests OPEC actually enforces production stability, allowing prices to swing widely. The simple rule of taking SPR oil as it is contractually due exaggerates this OPEC pattern, since the SPR takes the same volume regardless of price. It is a business model different from all private market

participants, and if followed by a significant number of market participants would leave to explosive price swings.

The SPR Office proposes a return to the SPR oil acquisition business model, allowing deferrals which will always be counter-cyclical to OPEC induced price volatility. Since there would be consistency in our behavior, markets would not be surprised, and contractors would be comfortable knowing that the Government was acting in a rational business-like manner. Acquiring less oil in high price markets and more oil in low price markets is such ordinary behavior, it would have much less impact on market forces than does the practice of ignoring price and acquiring just as much oil at high prices as at low prices.

Inconsequential volumes: If we look at the SPR from the perspective of daily supply and demand, the SPR fill rates are inconsequential. The fill rate is 100-170,000 barrels per day compared to world production and consumption of 75 million barrels per day. However, when OPEC countries are determined to maintain discipline in their export quotas, the cumulative impact of filling the SPR becomes more significant when compared to U.S. and Atlantic basin inventories. Essentially, if the SPR inventory grows, and OPEC does not accommodate that growth by exporting more oil, the increase comes at the expense of commercial inventories. Most analysts agree that oil prices are directly correlated with inventories, and a drop of 20 million barrels over a 6-month period can substantially increase prices. The EIA analysis later in this paper alludes to the power to inventory changes in changing prices within a few weeks and months, and the price impact of the weekly release of API and EIA inventory statistics is testimony to the power of inventory change in determining prices. A variation of 3 or 4 million barrels from expected inventory can change prices more than a dollar per barrel during a day. Clearly, a change in private inventories equal to the SPR inventory change could have a substantial price impact.

Economic Impacts: Historically, studies of the SPR, recognize three benefits of selling the oil at the time of an emergency. The most important and powerful of the three is referred to as the Gross Domestic Product (GDP) effect. When oil supplies are disrupted and oil prices spike, the emergency nature of the situation causes the domestic economy to slow for a variety of reasons. It is often observed that every recession since World War II has been preceded by an oil supply disruption. However, cyclical price increases, not caused by disruptions do not have the same impact on economies. Therefore, proponents of the option of filling the Reserve at a constant rate argue there is no reason to modify fill rates even if you perceived a rise in prices.

The SPR Office agrees that cyclical price changes do not have the same economic effect as price shocks. Nevertheless, the SPR Office advocates counter cyclical activities by the agencies of government that have tools for that purpose. Since it is known that selling oil is an economic stimulant and removing oil from the market is an economic depressant, it seems that it would be good public policy if oil acquisition were to take during robust growth and deferred when the economy is in a cyclical downturn.

There are a number of reasons supporting the deferral of acquisitions may help the economy, at least directionally, if not forcefully.

The oil price change will prevent an excessive redistribution of domestic purchasing power away from consumers of oil and natural gas products. Based on 20 million barrels per day of consumption, a \$1 per barrel price drop will preserve economic purchasing power of over \$7 billion per year – equal to a modest tax cut. In the current fragile economic expansion characterized by strong consumer demand but weak capital spending, a falling stock market and uncertain investment environment, providing the consumer with the means to continue spending is good economic policy.

If oil imports for the SPR are delayed, the balance of trade improves in the short term. In the current circumstances, a balance of trade improvement would be welcome. Specifically, the U.S. dollar is falling in value, which may have very negative impacts for the economy in the form of inflation. Reducing oil imports, and the imbalance in trade takes pressure off the U.S. dollar, and reduces the incentive for the Federal Reserve to increase interest rates with the goals of suppressing inflation and supporting the dollar. While this effect is admittedly small, it is directionally helpful.

There are two other benefits to the drawdowns that do apply to a normal market. First, all oil coming into the SPR is imported, and the change in price caused by a reduction in oil demand will lower the cost of imports. If deferrals of SPR deliveries were to reduce prices by \$1 per barrel, the import cost of oil to the U.S. will drop \$10 million per day, or \$3.6 billion per year. This is a direct measurable benefit to the American people.

The last benefit that occurs when the SPR sells oil in an emergency is that the U.S. will make a profit on the oil it bought at a lower price. Buying oil at a lower average price has the equivalent benefit. If the SPR can average down the price of oil it injects in the Reserve by \$1 per barrel between now and 2005, the U.S. Treasury will be better off by \$125 million, a direct benefit.

There are also programmatic reasons for wanting to lower the average cost of oil added to the Reserve. As a matter of public stewardship, the SPR has been (sometimes fairly) accused of buying oil at high prices and selling low. If the SPR can use a rule for oil acquisition that lowers the average cost, it is more likely the program can show a financial profit rather than a loss, a result that would enhance the Department's image and employee morale.

The Department is planning to starting a study of SPR size either on its own, or in response to the provision in the Senate Energy Bill about to go to conference, requiring such a study within 6-months of enactment. In the cost benefit analysis associated with that study, the price of oil is a powerful determinant of the outcome of the study. If the Department can institute a rule for acquisition that lowers its cost, the projected net benefits of expanding beyond 700 million barrels will be improved. The opportunity for this cost reduction is documented. Using its business model to renegotiate delivery dates for SPR oil that was owed to the Department in 2000 and 2001, the SPR Office was able

to raise 7 million barrels of premiums in exchange for the delays, on a base of less than 50 million barrels of oil. At a current market value of \$25 per barrel, the deferral reduced costs by \$175 million. Reducing the cost of oil acquisition will radically alter the terms of debate for any future expansion of the Reserve.

**The Issue of Urgency to Fill:**

As noted above the strongest argument against renegotiating delivery schedules is that there is urgency to fill the Reserve to its capacity. However, given the current outlook for OPEC exports, and commercial inventories, it appears to the SPR Office the Government should be indifferent to deliveries of the outstanding oil accounts receivable in 2002 or 2003. If in fact, a major event is likely to occur within the next year that will cause an energy supply emergency, it is arguably superior to have the

<b>EXHIBIT V-5</b>
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**From:** Kateiva, George  
**Sent:** Monday, November 19, 2001 6:24 AM  
**To:** COMMS  
**Subject:** FW: SPR royalty transfer update

-----Original Message-----

**From:** Marland, Nancy  
**Sent:** Friday, November 16, 2001 9:04 AM  
**To:** Shourbaji, Nabil; Landry, Gary; Waggoner, Michael; Callahan, David  
**Subject:** FW: SPR royalty transfer update

fyi

-----Original Message-----

**From:** Shages, John  
**Sent:** Friday, November 16, 2001 9:17 AM  
**To:** LeMat, Lynnette; Marland, Nancy; Johnson, David  
**Subject:** FW: SPR royalty transfer update

-----Original Message-----

**From:** Blake, Francis  
**Sent:** Friday, November 16, 2001 8:03 AM  
**To:** Shages, John  
**Cc:** Kripowicz, Robert; Furiga, Richard; Card, Robert  
**Subject:** RE: SPR royalty transfer update

ok

-----Original Message-----

**From:** Shages, John  
**Sent:** Thursday, November 15, 2001 6:23 PM  
**To:** Blake, Francis  
**Cc:** Kripowicz, Robert; Furiga, Richard; Card, Robert  
**Subject:** SPR royalty transfer update

Frank; We held a meeting today with the Minerals Management Service heirarchy today. They allowed Steve Griles gave them clear instructions that if oil prices spike, and it becomes desirable to stop filling the SPR, the MMS should stop the transfer of royalty oil to DOE. We made the case for continuing the transfer and allowing DOE to manage the delivery schedule to eliminate the unwanted demand. They immediatly said the issue would have to resolved by you and Steve Griles, and then reviewed by the White House. They proposed writing an issue paper for you and Steve Griles, and we have agreed to do that jointly with them. While we believe the pros and cons of this issue are obvious, MMS feels they need some time to prepare their position and asked for November 28 as a date to have the paper ready for delivery to you, and we also agreed to that.

John Shages

**EXHIBIT V-6**

**From:** Kateiva, George  
**Sent:** Monday, November 19, 2001 6:22 AM  
**To:** COMMS  
**Subject:** FW: MMS RIK Meeting

-----Original Message-----

**From:** Marland, Nancy  
**Sent:** Thursday, November 15, 2001 2:02 PM  
**To:** Roy Habbaz (E-mail); Kateiva, George  
**Subject:** FW: MMS RIK Meeting

fyi, if you don't have already.

-----Original Message-----

**From:** LeMat, Lynnette  
**Sent:** Thursday, November 15, 2001 11:32 AM  
**To:** Shourbaji, Nabil; Callahan, David; Weggoner, Michael; Landry, Gary; Marland, Nancy; Giles, Harry  
**Subject:** MMS RIK Meeting

MMS has direction from their Deputy Secretary to fashion a program which would involve the termination of contracts when a certain trigger price for oil is reached. This differs from the direction from Deputy Secretary Blake which I forwarded you this morning. Since neither group can commit to a position opposed to their Deputy Secretary's position, we agreed to write a paper including both options which will be forwarded to our Deputy Secretaries to work out. Our respective options are to be completed by November 26 and the group will meet again November 28. Therefore, it looks like a technical meeting is more convenient for MMS December 6 or 7 but Milton Dial will confirm that later today. Perhaps we will be able to have a telephone meeting sooner.

**EXHIBIT V-7****MEMORANDUM FOR****FROM**

**SUBJECT:** Decision request on the rate of fill for the Strategic Petroleum Reserve (SPR)

**ISSUE:** The Department of Energy (DOE) has a schedule for filling the SPR between now and early 2005. DOE has the option of entertaining offers to delay deliveries in return for bonus barrels of oil which could relieve the speculative oil market. It also has the option of accelerating fill if supplemental appropriations are requested.

**SENSITIVITIES:** Economic, budget, energy security, foreign, market signals

**BACKGROUND:** The SPR has had an oil accounts receivable since April 1999. Monthly deliveries to the SPR by contractors are scheduled by the terms of contracts. Under certain market conditions, it is advantageous for both the Government and the contractors to renegotiate deliveries to later dates. During 2000 and 2001, whenever these conditions arose, the SPR Office agreed to later delivery dates in exchange for more oil. Renegotiation of delivery dates, if proposed by contractors, in exchange for more oil is the standard business practice for SPR oil acquisition.

In November, in response to the events of September 11, 2001, the President determined to fill the Strategic Petroleum Reserve to its capacity using primarily royalty oil from Federal leases in the Gulf of Mexico. We have been emphasizing the importance of this decision for energy security reasons. The rate at which the Department of Interior can deliver royalty oil to DOE is limited; the current transfer rate is 60,000 barrels per day. The rate is scheduled to increase by October, with a potential maximum of 130,000 barrels per day. At those rates, the SPR will be filled to capacity in early 2005.

From November 2001 until recently, market conditions favored taking delivery of oil according to schedule. During the first quarter 2002, SPR added 11.4 million barrels to inventory. The scheduled deliveries for the remainder of 2002 range from 3-5 million barrels of oil per month. Now, due to events in the Middle East, market concern over Iraq, and the cumulative impacts of OPEC production restraints, prices for oil from now through the summer are significantly higher than prices for oil deliveries one year in the future. This market condition favors contractors offering to renegotiate deliveries to a later date. DOE has received an offer to pay an additional 750,000 barrels of oil in exchange for rescheduling 9 million barrels to one year later. Normally, DOE would negotiate based strictly on economic considerations, but current conditions require consideration of energy security, international relations, budget and market signals as well.

**DISCUSSION:** Deferrals of deliveries have saved the U.S. a significant sum of money. Deferrals of 31.17 million barrels owed to the SPR in Fall 2001, gave SPR an additional 3.45 million barrels without additional cost. Similarly, SPR was owed 27.13 million barrels of oil spread throughout 2000 from a Royalty Oil transfer program that ran from 1999 through 2000. After renegotiation for later delivery, the volume increased by 3.55 million barrels. If we value these premium barrels at \$25 per barrel, they have reduced costs by \$175 million. The potential for savings to the Treasury if we continue to follow this business model until the Reserve is full is additional hundreds of millions of dollars.

**Economic impacts:** The latest surge in oil prices is not welcomed by the world's oil importing economies, most of which are just beginning to recover from recession. If prices stay artificially high due to a war premium, recovery will be slowed everywhere including the U.S.. Renegotiating deliveries now scheduled for May, June and July would ease U.S. oil demand and relieve some speculative pressure from the oil market.

**Energy Security:** From an energy security perspective, rescheduling deliveries could delay filling the SPR. Current inventory is about 560 million barrels, and the initial drawdown rate is 4.2 million barrels per day. At a 700 million barrel inventory, the initial drawdown rate will increase to 4.4 million barrels per day, and the inventory would equate to approximately 64 days of net U.S. imports compared with 51 measured at the end of 2001. Part of U.S. security depends upon coordination with other stockpiling consumer countries. While the U.S. has roughly half of the world's government owned and controlled stockpiles, the dispersed nature of the other stockpiles allows them to be drawn quickly. In total, International Energy Agency member countries, including the U.S. have a drawdown capacity in the first month of over 12 million barrels per day.

**Budget and Fiscal Impact:** The current program has no budget impact since the royalty oil is transferred from the Department of the Interior administratively. The actual cost to the Treasury of adding 108 million barrels of oil to the SPR per the President's direction is about \$2.7 billion in foregone revenues. Choosing to renegotiate the delivery dates would have no budget impact, but would reduce the cost to Treasury, potentially by a few hundred million dollars over time. If we decide, for economic security reasons, to accelerate fill, we would ask the Congress for a supplemental appropriation for FY 2003 of about \$2 billion, and the fill rate during 2003 would be accelerated to 300,000 barrels per day.

**Foreign Relations:** The tense state of world affairs would cause any deviation from the status quo to be over analyzed by the press and foreign governments. Both renegotiating deliveries to later dates or announcing an acceleration of fill could be interpreted to mean the U.S. expected an expansion of world hostilities. Delaying deliveries could be seen as an indication of trouble in the immediate future, whereas accelerating fill could be seen as an indication of trouble in 2004-5.

**Market Signals:** Renegotiating the delivery dates might be interpreted as a move by the Government to deflate the "war premium" or speculative portion of the recent oil price rise.

If we chose to accelerate fill, we would depend upon the exporting countries to increase their production to accommodate the SPR fill. Otherwise, a fill rate of 300,000 barrels per day during all of 2003, would reduce commercial inventories significantly, raise prices and have a negative impact on the oil importing economies of the world.

#### **PROS AND CONS**

##### Option 1. Do not entertain offers to renegotiate delivery dates

Pros: Sends no signals to producing countries or allies

Fills the SPR at an even rate between now and 2005

Does not raise any speculation that the Administration is willing to meddle in the market

Cons: Deviates from the normal SPR business practice

SPR fill would continue even if markets become distressed or highly speculative

##### Option 2. Renegotiate delivery dates

Pros: Reduces the program cost to Treasury, with a potential in the hundreds of millions of dollars

Acts automatically to counteract market volatility by increasing demand when prices are relatively low and reducing demand when prices are relatively high

Acts to mitigate an unwelcome price rise while the world's economies are only beginning to recover from recession

Could be viewed favorably by consumers

Cons: Delays the addition of oil to the SPR, with energy security implications

May appear to be a market intervention or an attempt to challenge OPEC in controlling market inventories and prices

Could be viewed as an accommodation to "big oil"

##### Option 3. Do not renegotiate delivery dates and fill to capacity by the end of 2003

Pros: Advances the increase in potency of the SPR by one year

Sends a signal to other stockpiling countries encouraging them to add to inventories

Cons: Requires a major appropriation for FY 2003

Increases the SPR fill rate sufficiently to raise world oil prices significantly absent an accommodation by exporting countries

Sends a loud signal that the U.S. is putting a premium on near term energy security, which might be interpreted as preparation for increased hostilities

<b>EXHIBIT V-8</b>
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**Renegotiation of Delivery Dates for Strategic Petroleum Reserve Oil**

**Desired Action:** Allow the Strategic Petroleum Reserve (SPR) Office to resume negotiations of delivery dates for oil that is contracted for delivery on certain future dates.

**Background:** In October and November 2000 the SPR delivered 30 million barrels of oil to contractors. Those contractors were obligated to return 31.33 million barrels between August and November 2001. However, BP which had contracted for 9 million barrels of oil has already renegotiated the delivery of 9 million barrels, and in exchange for the delay until 2002 is giving the SPR an extra 700,000 barrels of oil.

The SPR Office has also been routinely renegotiating delivery dates for oil that is owed to the Department as part of the Royalty in Kind (RIK) transfer program that existed in 1999-2000. Over those two years, renegotiation of delivery dates has increased the amount of oil the Department will receive by another 2 million barrels. While the RIK program and the 2000 exchange program are different in philosophy, the mechanics of accepting oil and negotiating delivery dates are identical.

**Advantages to renegotiating delivery dates:**

- This is very business like. The private sector does not build inventories when current prices are high relative to future prices. High value scheduled for near-term delivery is frequently exchanged for greater volumes of oil to be delivered when prices are lower.
- Rescheduling deliveries increases the inventory of the Reserve without fiscal expense, thereby satisfying a strategic goal and doing it efficiently. The Department does not have appropriations to buy oil, and this is one of only a few feasible methods of acquisition.
- Speed is essential. Delayed deliveries are only valuable to industry when future prices are low relative to current prices. That condition has existed for almost two years, but the prices are moving in the direction of equality, and the opportunity may evaporate.
- This practice testifies to serious management by bringing down the average cost of oil in the Reserve.
- This is good public policy. Commercial petroleum inventories are low, retail product prices are high and economic growth is slow. The Government should avoid acquiring oil for the Reserve under these circumstances. Deliveries can be successively renegotiated until inventories are normal, near-term prices are low and the economy is growing strongly. Insisting on deliveries to the SPR during in a tight market would be heavily criticized as mismanagement and would be difficult to defend.
- This is equitable. The Department has been willing to negotiate with the contractors for all of the royalty in kind oil and with BP for nine million barrels of exchange oil. Other contractors can offer the Department equally profitable proposals.

<b>EXHIBIT V-9</b>
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Memorandum to Paul Leiby  
 From: John Shages  
 June 5, 2002  
 Subject: Economic Impacts of Filling and Deferred Filling of the SPR

Paul: Thanks for the thoughts on the deferral issue you laid out in your May 28, memorandum. Since I am writing a paper on the subject, your ideas have helped clarify my thinking. For your benefit, but also as an exercise to make sure my own thoughts are clear, I am writing to address each of the points you made in anticipation they will be raised again by other players in the game.

Generally, I don't know how to measure the impacts of small changes, but as with so many things economic, we can be fairly certain of the direction of impacts. If nothing else, I intend to highlight what should be directional improvement even if I can't quantify the situation.

**This Mini-Study Proposes to Change the Terms of Debate on the SPR**

- It has long been the DOE/SPR position that filling the SPR has small-to-no social effects or costs (beyond the direct costs), because
  - The proposed fill rates are all small compared to the amounts of excess oil capacity in the market, and the response of the market to such a small disturbance is ambiguous; and
  - The macro-economic dislocation associated with a small (less than \$1/bbl) price change under normal, smoothly function markets with full anticipation of a pre-announced and steady fill rate, would surely be small, and certainly be undetectable with any possible empirical method.

Response: It's a mistake to think that the fill program always has minimal impact. Since impacts always occur at the margin, it is important to know the state of affairs at the time the SPR adds its marginal demand. A key consideration is whether OPEC is in a disciplined or undisciplined phase. If OPEC has the will to stick to a quota that will cause an inventory drop, then filling the SPR will accelerate the private sector inventory drop. Excess capacity in OPEC members is assumed to come on line during a disruption and SPR drawdown, but during a time when SPR is considering filling, excess OPEC capacity can as easily be assumed to be unavailable by definition of the OPEC cartel goals. Given OPEC behavior over the last 18 months, I believe OPEC is not accommodating economic growth, much less an inventory drop caused by SPR fill. It also seems that the role of private inventories in determining oil prices is under-appreciated relative to immediate supply/demand imbalance. Joann Shors regressed oil prices against inventory levels and there is a very strong inverse correlation. If you accept the assumption of an intransigent OPEC, then the impact of SPR fill on inventories is not a seemingly innocuous 100,000 barrels per day, but a powerful 30 million barrel reduction of private inventory over 10 months.

Similarly, the macro-economic impact of the change is at the margin. If the economy is robust, or even mildly expansionary, I would agree a \$1 per barrel price change would not have a noticeable impact — the price increases of 1999 were easily accommodated. However, in the current

situation, where the only strong sectors of the economy are housing and consumer spending, and the economic recovery is nascent and weak, I believe that marginal changes such as a \$1 dollar oil price change can make big differences. For example, the dollar is falling fast, and SPR fill adds directly to imports in the calculation of the balance of trade. If we defer, we would immediately improve the situation to the tune of about \$250 million per month; possibly inconsequential but also certainly an improvement that might impress currency traders and directionally help stabilize the dollar.

In the current situation, I wouldn't ignore any stimulation tool, regardless of potency.

**Need to Recognize Distinction Between Effects of Filling and Drawing-down SPR**

- Evaluating fill effects with essentially the same framework we use to evaluate drawdown benefits (i.e., estimating oil price changes with a very low short-run market price elasticity and then applying the elasticity of GDP with respect to oil price) would be likely to significantly overestimate the price effect, and would lead to a completely unreliable and highly exaggerated estimate of GDP effects.

Response: I agree totally, and I don't propose any specific GDP elasticity effect because I don't have a theoretical explanation of how the price drop will help. Nevertheless, the downside risks to the economy are myriad, and the chances of over stimulation are nil, therefore, leading me to the conclusion to use the deferrals as a stimulus regardless of the potency.

- It is very important to distinguish qualitatively between the expected economic effects of SPR drawdown and SPR filling. The economic effects of a drawdown during a disruption derive from anticipated changes in market price of oil, and the possible macroeconomic consequences of those price changes. During an oil supply emergency, price changes can be large and unexpected. An SPR drawdown could add as much as 5% to world oil supply, significantly buffering the oil price shock.

Response: Think of the deferrals not as a daily flow, but as a change to projected inventory in the private sector. If, come December 2002, U.S. private inventories are down 30 million barrels of crude oil, we will have higher prices, nervous traders, a more confident OPEC and an IRAQ that can cause price gyrations by deciding not to renew its export agreements for a month.

- In contrast to drawdown, when filling the SPR price changes are likely to be modest, gradual, and sustained. Filling the SPR alters oil balances by 0.1% to 0.2% (for a 75 to 150 MMB fill rate). Under normal market conditions, the price effect of a SPR fill is ordinarily small and ambiguous, given that supply and demand are functioning smoothly, have many months to respond, and there is substantial excess capacity.

Response: The critical assumption here is "normal market conditions." For too long the opponents of using the SPR have bifurcated markets into disrupted, emergency situations versus normal. I am of the opinion that a normal market would be when the members of OPEC are producing up to their capacity as long as the price is above marginal cost. First, we are very rarely in that condition, and second it would be disastrous for our domestic industry and the environment if we were there. Instead, we are in an OPEC cartel controlled market, but there is no consistency in OPEC policy. Therefore, I argue there is no magic dividing line between a normal market and a disrupted market, but a continuum of prices that reflect an increasing or decreasing degree of interference (read disruption) by the cartel. A discussion of when the supply and price go from

being normal to disrupted is only meaningful in the legal sense of the President needing to make a finding of an energy supply emergency. I believe that the full range of indicators of economic well being need to be considered when we make the assessment that we have crossed the line. At this moment oil prices are moderate, but a month ago they were too high. I base that judgment on the degree of backwardation in the futures market and the general state of the economy. This is a lead-in to my proposal that the degree of backwardation in the futures market should be the determining factor in deciding whether or not to defer deliveries.

- Moreover, we can be confident that even if a limited oil price increase occurs, a price impact of that level is very unlikely to result in macroeconomic dislocation, or measurable GDP losses of any kind. The macro-economic dislocation associated with a small price change under normal, smoothly function markets with full anticipation of a pre-announced and steady fill rate, would surely be small, and certainly be undetectable with any possible empirical method. Note that the most recent empirical analysis of the oil-macro link emphasize that the dislocation seems to follow from price excursions that are outside the recent price range or norm. From 1990 to 2001, the average refiners acquisition cost of imported crude has had a monthly standard deviation of \$4.65. Thus, even if the SPR fill would raise prices by \$1, this would only be a "shock" of less than 1/4th of a standard deviation, far too small to disrupt firms, consumers, or investors.

Response: I fully agree that we will never be able to measure the impact of deferrals, because they will be small. Nevertheless, given the state of the U.S. and world economies, I believe that directionally this is the right thing to do. Given the potential for the U.S. to have a decade that could look like the Japanese economy of the 1990's, I don't want to leave any tool for stimulation on the shelf regardless of its weight.

- The recognition that SPR fill effects differ not only in degree but in *nature* from draw effects is critical to the argument for a government emergency reserve. If the costs of SPR fill are believed to be symmetric to the benefits of SPR draw, but simply smaller in magnitude in direct proportion to the magnitude of the associated oil flow, then filling the SPR could never be worthwhile. The cumulative costs of a gradual SPR fill would counterbalance any possible benefits from drawdown. In fact, costs would outweigh the benefits since drawdown benefits are doubly-reduced by probability-weighting and discounting, since they are uncertain and delayed by years. The expectation that the SPR can be filled slowly with little-to-no effect on market price, and insignificant macroeconomic spillover costs, is central to the conclusion that stockpiling can yield a positive expected net present value.

Response: Agreed, but the way I read your view, I again see it as a case of average versus marginal analysis. First, we have 570 million barrels of inventory; that volume is not in play. It is a volume that covers most disruption scenarios. Second we are going to fill to a 700 million barrel inventory by 2005. The volume subject to deferrals at this moment is 42 million barrels, and the period of deferral might be a year. If you ran the disc-risk model and postponed the incremental fill by one year (made 2002 fill equal to zero but increased 2003 fill by the same volume) how would the value of the Reserve change? I venture to say almost not at all, because the chances of drawing all the oil in the Reserve during the year delay are minute. Furthermore, if I knew we were going to have a massive disruption starting in January 2003, given my assumption that OPEC does not accommodate SPR fill with more production, I would doubly insist on deferral because I would rather see a build in private inventories than in SPR inventories.

Here is a more concrete consideration. During 2000-1 we deferred deliveries of approximately 50 million barrels of oil. In exchange we were given 7 million barrels of oil as premia. Since

some of the deferrals were for more than one year we can't take a straight ratio, but for illustration let's say we received a 10 percent annual return. That return is a direct cost reduction. It is my contention we can institutionalize that cost reduction by making deferrals during periods of backwardation our normal business model. The consequence of that change is that you can go back to the disc-risk model, and for what-ever EIA oil price vector you have during the oil acquisition phase, reduce it by 10 percent. Run the model again, and it is obvious that the model is going to suggest a larger optimal size for the Reserve.

**Alternative Approach to Deferral Analysis: Rely on Private Responses to the Market, and Focus on the Social "Insurance" Implications of Deferral**

- It may be helpful to couch the planned analysis in terms of the social effects of *fill deferral* rather than the social effects of *filling* the SPR. The social costs of deferral stem largely from the temporary reduction or delay in the protection afforded by the SPR. The social benefits of deferral stem from the prospects for slightly larger deliveries of oil to the reserve by private firms later, in exchange for the right to defer. Simple estimates of the cost of delaying protection from delaying fill, and the benefits of added protection by filling more later, can be constructed from the existing size study cases.

Response: Agreed, but as noted above, if I can get a significant cost reduction from the deferral, I believe it will overwhelm the gap in the insurance since we are only protecting ourselves against the big or long lived disruption during a short time period.

- It is reasonable to posit that in the matter of fill planning the government's, and society's, principal interest resides in the weighing of these considerations regarding the timing and magnitude of SPR "insurance" coverage.

Response: Agreed.

- In the absence of a clear indication that fill deferral is needed to avoid an adverse impact on the market, deferral considerations having to do with a detailed assessment of market conditions, current and prospective private inventory levels and/or futures spreads, and the fine tuning of delivery schedules on the basis of anticipated market conditions, are arguably best left to the private sector. Thus, one approach the SPR Office could take is to leave it to private sector firms to perform the market analyses they need to determine whether they wish to request fill deferral, while the government could establish the terms for a fill deferral based on its estimate of the tradeoff between foregone insurance coverage now and the value of more oil later.

Response: Your proposal sounds like the status quo ante, exactly the position I am advocating. For two years, any contractor could look at the backwardation in the futures market, and make us an offer for deferral. We ran our own valuation of the delay, set a negotiating target for ourselves for a share of the money on the table, and if we hit our target we agreed to the deferral. Every contractor deferred deliveries; they understood the process, it mimicked what they do in the private sector, and no surprises. The status quo is what appears irrational to the market place. It leaves the contractor vulnerable to things such as a short squeeze in the Brent market, and in fact there have been some attempts to blame a recent squeeze in the dated Brent market on us for demanding delivery regardless of market circumstances. Also, remember Howard Borgstrom's thesis. It can be boiled down to, "If you decide to have a simple rule for acquiring SPR oil, the worst one you could possibly pick would be filling at a constant rate of speed."

- If a case is to be made that under certain normal market conditions filling the SPR will adversely affect the market, care should be taken to also identify the conditions under which filling the SPR would not effect the market, or may even be thought to have a beneficial effect on the market. Otherwise, the analysis will serve to make it much harder to fill the reserve later and achieve the desired SPR size in a timely fashion. Even if adverse and beneficial fill conditions are identified, justifying fill deferral on the basis of its market effects will sharply increase the "burden of proof" for filling the reserve. It will also increase the information requirement, since the DOE must estimate not only the (uncertain) costs of filling in the near future, but also how those costs will vary over time, given uncertainty about future market conditions.

Response: I agree in principle, however, the essence of my argument is the Government should reserve the flexibility to look at the markets and the economic conditions. You will never be able to catalogue all the scenarios. The only rule I am sure of is the futures market must be in backwardation.

- If the deferral option is to be pursued, we can anticipate the following critique: "If the government is interested in market order, under normal market conditions that interest may be better served by an orderly participation in the market, rather than strategically ducking in and out of the market." In an analogy to the Federal Reserve, there are strong reasons to avoid trying to anticipate and stabilize the market by making frequent or significant changes in SPR fill schedules. For this reason it seems that a steady-hand policy that allows market actors some flexibility in fill deliveries, but only gradually changes the terms under which that flexibility is offered, may be both advisable and most acceptable to the economic leadership in this administration.

Response: This is a reasonable argument. The SPR business model was to always wait for the contractor to approach the Government with an offer. The SPR Office would never make the

proposal for deferral to the contractor. The limiting factor is the desire of the contractor to negotiate; the more lucrative the deferral, the more volume will be deferred.

In a bit of role reversal, I am confident the volume of oil we would put in play is not so great that if we deferred it all the markets would not be shaken to their foundations.

**Proposed Framing of Issue: Deferral For Mutual Benefit of Industry and Government**

- The DOE/SPR's may wish to take the position that deferral of SPR refill may be appropriate out of consideration for the cost and inconvenience to private agents in the oil market who must supply the oil, but NOT necessarily out of consideration for some possible large effect on the market price and a possible attendant social cost. Thus the DOE/SPR position could reasonably be that the effects of filling the SPR in this tighter market are principally a "transfer," imposing a greater cost on those who must supply the oil, but not markedly affecting market outcomes.

Response: If we were in the status quo ante position I would be satisfied with this argument. Now that the status quo is a fill model that was discredited years ago, I am inclined to use sexier arguments if they are sound directionally even though I may not be able to know their potency.

- This position has two benefits. (1) It does not require an estimate of large social costs from filling, which may well be unjustified and, if in error, could come back to haunt and paralyze the SPR, and (2) it emphasizes that deferral will benefit those who owe oil, so the DOE/SPR might fairly propose that the deferred deliveries should be slightly larger. If instead we were to estimate substantial *social* costs to filling now, the private agents could fairly suggest that perhaps they should be allowed to deliver *less* oil later in exchange for agreeing to the deferral!

Response: Ah, but what would be the legal foundation? The whole transaction is premised on the legal authority to exchange oil in order to acquire oil. Exchanging oil now for less oil later would at best be called an unauthorized oil sale or at worst an unauthorized sale in tandem with a money losing purchase. It would certainly fly in the face of the admonition in the law to minimize the cost of the acquisition.

Call if you want to discuss this, or I welcome any written material.

Regards,

<b>EXHIBIT V-10</b>
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May 28, 2002

John Shages  
Office of Strategic Petroleum Reserves,  
U.S. DOE

Dear John,

**Economic Impacts of Filling and Deferred Filling of the SPR**

I understand that you are interested in analyzing the social costs of filling the SPR, or the social benefits of delaying filling, and thereby exploring the merits of delaying fill *and* potentially building a case for private firms to swap back even more oil after delaying. Thank you for the opportunity to consider this timely issue, and to offer some suggestions on analytical approaches. While the general proposal for flexibility in fill delivery is appealing, I also suggest, respectfully, that there are significant risks from acting too hastily or on the basis of too casual an analytical approach. This note mentions some of these possible risks, and offers some analytic approaches which might suit the needs of the SPR Office while avoiding some of the potential pitfalls.

My principal purpose in this note is to raise some issues that you might not yet have had a chance to consider, and perhaps just repeat some points that we are all quite familiar with. I am still working through these issues myself, and appreciate the chance to get some of these thoughts on the table. I would be happy to discuss any of these points further.

**This Mini-Study Proposes to Change the Terms of Debate on the SPR**

- It has long been the DOE/SPR position that filling the SPR has small-to-no social effects or costs (beyond the direct costs), because
  - The proposed fill rates are all small compared to the amounts of excess oil capacity in the market, and the response of the market to such a small disturbance is ambiguous; and
  - The macro-economic dislocation associated with a small (less than \$1/bbl) price change under normal, smoothly function markets with full anticipation of a pre-announced and steady fill rate, would surely be small, and certainly be undetectable with any possible empirical method.

**Need to Recognize Distinction Between Effects of Filling and Drawing-down SPR**

- Evaluating fill effects with essentially the same framework we use to evaluate drawdown benefits (i.e., estimating oil price changes with a very low short-run market price elasticity and then applying the elasticity of GDP with respect to oil price) would be likely to significantly overestimate the price effect, and would lead to a completely unreliable and highly exaggerated estimate of GDP effects.
- It is very important to distinguish qualitatively between the expected economic effects of SPR drawdown and SPR filling. The economic effects of a drawdown during a disruption derive from anticipated changes in market price of oil, and the possible macroeconomic consequences of those price changes. During an oil supply emergency, price changes can be large and unexpected. An SPR drawdown could add as much as 5% to world oil supply, significantly buffering the oil price shock.
- In contrast to drawdown, when filling the SPR price changes are likely to be modest, gradual, and sustained. Filling the SPR alters oil balances by 0.1% to 0.2% (for a 75 to 150 MMB fill rate). Under normal market conditions, the price effect of a SPR fill is ordinarily small and ambiguous, given that supply and demand are functioning smoothly, have many months to respond, and there is substantial excess capacity.

- Moreover, we can be confident that even if a limited oil price increase occurs, a price impact of that level is very unlikely to result in macroeconomic dislocation, or measurable GDP losses of any kind. The macro-economic dislocation associated with a small price change under normal, smoothly function markets with full anticipation of a pre-announced and steady fill rate, would surely be small, and certainly be undetectable with any possible empirical method. Note that the most recent empirical analysis of the oil-macro link emphasize that the dislocation seems to follow from price excursions that are outside the recent price range or norm. From 1990 to 2001, the average refiners acquisition cost of imported crude has had a monthly standard deviation of \$4.65. Thus, even if the SPR fill would raise prices by \$1, this would only be a "shock" of less than 1/4th of a standard deviation, far too small to disrupt firms, consumers, or investors.
- The recognition that SPR fill effects differ not only in degree but in *nature* from draw effects is critical to the argument for a government emergency reserve. If the costs of SPR fill are believed to be symmetric to the benefits of SPR draw, but simply smaller in magnitude in direct proportion to the magnitude of the associated oil flow, then filling the SPR could never be worthwhile. The cumulative costs of a gradual SPR fill would counterbalance any possible benefits from drawdown. In fact, costs would outweigh the benefits since drawdown benefits are doubly-reduced by probability-weighting and discounting, since they are uncertain and delayed by years. The expectation that the SPR can be filled slowly with little-to-no effect on market price, and insignificant macroeconomic spillover costs, is central to the conclusion that stockpiling can yield a positive expected net present value.

**Alternative Approach to Deferral Analysis: Rely on Private Responses to the Market, and Focus on the Social "Insurance" Implications of Deferral**

- It may be helpful to couch the planned analysis in terms of the social effects of *fill deferral* rather than the social effects of *filling* the SPR. The social costs of deferral stem largely from the temporary reduction or delay in the protection afforded by the SPR. The social benefits of deferral stem from the prospects for slightly larger deliveries of oil to the reserve by private firms later, in exchange for the right to defer. Simple estimates of the cost of delaying protection from delaying fill, and the benefits of added protection by filling more later, can be constructed from the existing size study cases.
- It is reasonable to posit that in the matter of fill planning the government's, and society's, principal interest resides in the weighing of these considerations regarding the timing and magnitude of SPR "insurance" coverage.
- In the absence of a clear indication that fill deferral is needed to avoid an adverse impact on the market, deferral considerations having to do with a detailed assessment of market conditions, current and prospective private inventory levels and/or futures spreads, and the fine tuning of delivery schedules on the basis of anticipated market conditions, are arguably best left to the private sector. Thus, one approach the SPR Office could take is to leave it to private sector firms to perform the market analyses they need to determine whether they wish to request fill deferral, while the government could establish the terms for a fill deferral based on its estimate of the tradeoff between foregone insurance coverage now and the value of more oil later.
- If a case is to be made that under certain normal market conditions filling the SPR will adversely affect the market, care should be taken to also identify the conditions under which filling the SPR would not effect the market, or may even be thought to have a beneficial effect on the market. Otherwise, the analysis will serve to make it much harder to fill the reserve later and achieve the desired SPR size in a timely fashion. Even if adverse and beneficial fill conditions are identified, justifying fill deferral on the basis of its market effects will sharply increase the "burden of proof" for filling the reserve. It will also increase the information requirement, since the DOE must estimate not only the (uncertain) costs of filling in the near future, but also how those costs will vary over time, given uncertainty about future market conditions

- If the deferral option is to be pursued, we can anticipate the following critique: "If the government is interested in market order, under normal market conditions that interest may be better served by an orderly participation in the market, rather than strategically ducking in and out of the market." In an analogy to the Federal Reserve, there are strong reasons to avoid trying to anticipate and stabilize the market by making frequent or significant changes in SPR fill schedules. For this reason it seems that a steady-hand policy that allows market actors some flexibility in fill deliveries, but only gradually changes the terms under which that flexibility is offered, may be both advisable and most acceptable to the economic leadership in this administration.

**Proposed Framing of Issue: Deferral For Mutual Benefit of Industry and Government**

- The DOE/SPR's may wish to take the position that deferral of SPR refill may be appropriate out of consideration for the cost and inconvenience to private agents in the oil market who must supply the oil, but NOT necessarily out of consideration for some possible large effect on the market price and a possible attendant social cost. Thus the DOE/SPR position could reasonably be that the effects of filling the SPR in this tighter market are principally a "transfer," imposing a greater cost on those who must supply the oil, but not markedly affecting market outcomes.
- This position has two benefits. (1) It does not require an estimate of large social costs from filling, which may well be unjustified and, if in error, could come back to haunt and paralyze the SPR, and (2) it emphasizes that deferral will benefit those who owe oil, so the DOE/SPR might fairly propose that the deferred deliveries should be slightly larger. If instead we were to estimate substantial *social* costs to filling now, the private agents could fairly suggest that perhaps they should be allowed to deliver *less* oil later in exchange for agreeing to the deferral!

I and my colleagues at ORNL would be glad to work with the SPR Office (at HQ or in New Orleans, as needed) on these issues. I also look forward to discussing any of these points with you at your convenience.

Best Regards,

Paul Leiby

<b>EXHIBIT V-11</b>
---------------------

Hunt, Edith

**From:** Kateiva, George  
**Sent:** Friday, October 11, 2002 5:09 AM  
**To:** DMCOL  
**Subject:** FW: October Forties & Mars

FYI

-----Original Message-----

**From:** Waggoner, Michael  
**Sent:** Thursday, October 10, 2002 3:33 PM  
**To:** 'DHPears@MAPLLC.com'  
**Cc:** Callahan, David; Marland, Nancy (HQ); Kateiva, George; Habbaz, Roy; Gaillard, Rose  
**Subject:** FW: October Forties & Mars Delivery

Following up my previous email the SPR is not considering deferrals at the time.

-----Original Message-----

**From:** Waggoner, Michael  
**Sent:** Monday, October 07, 2002 8:49 AM  
**To:** 'Pears, Daniel H.'  
**Cc:** Callahan, David; Marland, Nancy (HQ); Kateiva, George; Habbaz, Roy; Gaillard, Rose  
**Subject:** RE: October Forties & Mars Delivery

Dan, Forties is acceptable with no price differential. Still working your request on deferral.

-----Original Message-----

**From:** Pears, Daniel H. [mailto:DHPears@MAPLLC.com]  
**Sent:** Wednesday, October 02, 2002 1:24 PM  
**To:** Waggoner, Michael  
**Subject:** October Forties & Mars Delivery

Mike,

As a follow up to our earlier conversations, Marathon Ashland would like to propose that North Sea Forties crude oil be added to the basket of crudes acceptable for delivery under our West Hackberry Sweet Crude exchange contracts. Specifically, we are seeking approval to deliver approximately 1,000,000 barrels of Forties to the SPR for the payback that is currently scheduled to be delivered into Sun Nederland in the October 23-28, 2002 window.

We are also interested in seeking approval to defer all, or a portion of the delivery of Mars sour crude oil that has been scheduled for October delivery to Bayou Choctaw through the Sugarland terminal. Our 250 MBD Garyville, LA refinery managed to maintain its run rate through Tropical Storm Isadore, but has depleted nearly all of its crude oil working inventory as receipts have been adversely impacted by the earlier shutdowns of the Gulf of Mexico pipeline systems. We did, however, have to make significant run cuts at our refineries located in Catlettsburg, KY and Canton, OH due to the lack of Gulf Coast receipts. With Hurricane Lili bearing down on us, and further supply disruptions the result, we will likely be forced to slowdown, or potentially shutdown, Garyville and the two northern plants due to lack of crude oil. We therefore request that we be allowed to defer the scheduled October Mars delivery in hopes that we can prolong or at least expedite the recommencement of refining operations at those facilities.

Wishing you a safe week,  
 Dan Pears  
 Mgr. International Crude Supply & Trading  
 Marathon Ashland Petroleum LLC  
 Houston, TX  
 (713) 296-2417

12/12/2002

FOR IMMEDIATE RELEASE  
January 24, 2003

Contact: Tara Andringa 202-228-3685  
Tara\_Andringa@levin.senate.gov

**Levin Calls on Bush Administration  
To Suspend SPR Oil Shipments  
to Prevent New Oil Price Surge**

WASHINGTON - As crude oil prices near a 10-year high and the U.S. Department of Energy (DOE) plans for delivery of some of the largest crude oil shipments to the U.S. Strategic Petroleum Reserve (SPR) in years, Sen. Carl Levin, D-Mich., today called on the Bush Administration to suspend further SPR deposits until surging crude oil prices stabilize and consumers get relief from rising prices for gasoline, home heating oil, and other petroleum products.

"This is not the time to be putting oil into the Reserve; it will reduce world oil supplies, drive crude oil prices higher, and hurt American consumers and business," said Levin. "Crude oil prices are already approaching heights not seen since the Gulf War. The coldest U.S. winter in 10 years has boosted demand for oil, while a production cutback by one of our major suppliers, Venezuela, has reduced U.S. crude oil imports. U.S. crude oil stocks are now at their lowest point ever. If the order goes out to fill the Reserve now, we will be taking millions of barrels of crude oil off the marketplace at a time when there isn't enough to meet demand. We will disrupt crude oil markets even more and push prices even higher."

Current contracts to fill the SPR call for depositing 4.4 million barrels of crude oil in March and another 3.7 million barrels in April. To meet these delivery schedules, oil companies are now purchasing the crude oil and chartering crude oil tankers to deliver it.

Some SPR deliveries scheduled for last December 2002, or for January or February 2003, have been deferred by DOE, but deliveries for March and April have not been deferred.

"In the past, oil companies delivering crude oil to the SPR have delayed deliveries in the face of spiking oil prices, and DOE ought to talk to them about a delay now," said Levin. "If delayed deliveries aren't possible, DOE could calm markets by immediately releasing any delivered oil onto the marketplace."

In November 2001, President George W. Bush ordered the SPR to be filled to its maximum capacity of 700 million barrels as quickly as possible. The SPR now holds 600 million barrels of crude oil, the largest volume in its history.

"Rising crude oil prices damage the U.S. economy by increasing the cost of gasoline and oil for consumers and increasing operating costs for business," said Levin. "American consumers and business have already been paying a crude oil 'war premium' of at least a \$5 a barrel for months. Reducing crude oil supplies by filling the SPR now would raise prices again and strike another blow to the U.S. economy."

The SPR was first established in the 1970s. Its primary mission is to provide a source of crude oil to meet U.S. needs in the event of a severe disruption in supply. President George H.W. Bush ordered the first release of oil from the SPR at the outset of the Gulf War in 1991. About 17 million barrels were released. In 2000, President Clinton ordered a second SPR release to counter rising prices for home heating oil. About 30 million barrels were released. Both times, oil prices dropped, as shown in the attached chart tracking crude oil prices since 1990.

"The two times oil was released from the SPR, crude oil cost about \$32 a barrel and the President acted because the price was high," Levin explained. "Today the cost is \$34 a barrel, but the course the government is on is to send more oil to the SPR, reduce world supplies, and spike prices even higher. The Administration should be putting oil in the Reserve when market prices are low, not high. Removing oil from the marketplace now would send hundreds of millions of dollars into the pockets of oil companies and oil-producing countries at the expense of American consumers and business forced to pay the higher prices that will result."

The amount of crude oil held in U.S. storage is at a ten-year low, as shown in the attached chart tracking U.S. oil inventories. Last week, DOE's Energy Information Administration (EIA) warned that continued reductions in U.S. crude oil inventories could force U.S. oil refiners to cut back production, causing energy prices to skyrocket. According to the EIA, "So while all of the dominoes haven't fallen yet, unless additional crude oil supply arrives in the near future, we could be watching the dominoes topple each other over the next month or two."

"U.S. crude oil stocks are dangerously low," said Levin. "We are standing on a cliff. If stocks go any lower, even a minor problem could disrupt supplies, shut down refineries, and spike gasoline and oil prices, inflicting more pain on U.S. consumers."

In 2002, as Chairman of the Senate Permanent Subcommittee on Investigations, Levin initiated an investigation into the extent to which the Administration's program to fill the SPR may be affecting crude oil prices. A report

summarizing the results of that investigation is being prepared and is scheduled to be released in a few weeks.

"American consumers and businesses already are paying the oil companies and oil-producing countries a premium for basic necessities -- to drive our cars, heat our homes, and ship our goods," said Levin. "The last thing the American people need right now is for its government to take oil off the market and send oil prices even higher."

##

**APPENDIX 4: ADDITIONAL DOCUMENTS****APPENDIX 4**  
***Additional Documents - #1***

*National Public Radio (NPR) March 7, 2003 Friday*

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National Public Radio (NPR)

**SHOW:** Morning Edition (10:00 AM ET) - NPR

March 7, 2003 Friday

**LENGTH:** 599 words

**HEADLINE:** Phil Verleger on rising oil prices

**ANCHORS:** BOB EDWARDS

**BODY:**

BOB EDWARDS, host:

Oil prices are at their highest level since September 1990, two months after Iraq invade Kuwait. If prices rise much higher, many analysts believe the federal government may release oil from its Strategic Reserves. Independent economist Phil Verleger says there are two main reasons why prices are so steep.

Mr. PHIL VERLEGER (Economist): One, the disruption of the Venezuelan production left inventories low. And, two, buyers of crude oil, refiners are scared to death to buy oil in advance of the coming war. There's a fear that the US government and other countries will release strategic stocks and effectively have a Christmas sale on oil. Prices will drop \$10 a barrel and leave the refiners with huge financial losses. And for that reason, companies essentially either don't buy oil, or when they buy oil, they'll pay a premium of about 10 cents a gallon to ensure against a fall in the price of oil when those stocks are released.

EDWARDS: I'm confused. They don't want to buy oil. I would think if they anticipate a need for oil, they would want to have some in stock.

Mr. VERLEGER: Everyone thinks that way, and that is historically correct, but companies have about 250 million barrels and the US government's sitting on 600 million barrels. And if the US government should release some of that oil, the value of the company inventories would fall in half. They just can't afford the risk.

EDWARDS: Yeah. What effect is the price situation having on the economy?

Mr. VERLEGER: Some of the economic studies that have been done suggest that every time we get a large increase in the price of oil on the magnitude we've had now, we see a recession 15 to 18 months later. The studies I've done show that the economic forecast for growth next year need to be marked down by about 2 percentage points or 3 percentage points which takes us precariously close to a recession. The high oil price is having a significant effect on the economy and a significant effect on consumer budgets.

EDWARDS: Is Venezuela the chief reason why oil supplies are so low or is there something else going on?

Mr. VERLEGER: Venezuela is one reason, but as a US Senate committee pointed out Wednesday, the US government was filling the Strategic Petroleum Reserve last year as prices were rising. And by my estimate, had the US government not filled the US Strategic Petroleum or returned the 20 million barrels they'd put in back to the market, prices right now would be around \$28 a barrel instead of \$38 a barrel and gasoline prices might be 25 to 35 cents lower.

EDWARDS: What do you think OPEC would do in the event of war?

Mr. VERLEGER: Well, OPEC has said that it will increase production. And OPEC has said it wants to be able to supply the world before Strategic Reserves are used.

EDWARDS: So OPEC would increase oil production when one of its members is under attack.

Mr. VERLEGER: My guess is all the OPEC countries would increase production in part because it's in their interest to keep prices in the mid-20s and not have them in the high 30s. If they're in the high 30s or higher, they face a recession in the West, in the United States certainly, probably the rest of the world, and a loss in demand and loss in revenue in 2004, 2005.

EDWARDS: So it's just business.

Mr. VERLEGER: It's just business. It has always been just business and it ain't going to change.

EDWARDS: Phil Verleger is an independent economist in California.

From NPR News, this is MORNING EDITION.

(Credits)

**Measuring the Economic Impact  
of an Oil Release from the Strategic Petroleum Reserve to  
Compensate for the Loss of Venezuelan Oil Production**

Phillip K. Verleger, Jr.  
Senior Fellow  
Council on Foreign Relations  
March 20, 2003

This note reports estimates of the impact of a release from the US Strategic Petroleum Reserve (SPR). The estimates are made using a model of the forward price curve that links crude oil prices to inventory levels, speculative activity, and market expectations. The model has been developed to examine a wide array of alternative market outcomes using "what if" scenarios and is now being licensed to several firms that trade or finance oil.

Here, I examine in retrospect the possible impacts of releasing SPR oil immediately to compensate for the disruption of Venezuelan crude exports. I show that releases large enough to prevent US inventories from declining would have kept crude oil prices \$9 per barrel lower. I also show that gasoline and heating oil consumers might have saved as much as 28 cents per gallon on their purchases. Then I examine the potential outcomes of releasing SPR oil at this time.

The failure to use the SPR in a timely manner to offset the Venezuelan disruption has left the nation's commercial petroleum stocks dangerously low just when the country is about to enter war. The failure to use the SPR promptly has also caused commercial participants to take steps that have substantially increased the risks involved in using the SPR now. Today, releasing stocks on the eve of war could create a very serious financial disruption — a disruption that could have been avoided had the SPR been used when the strikes began.

**Background**

Venezuelan oil workers went on strike on December 1, 2002, and oil production from the country plummeted quickly. Total output in December declined from 2.9 million barrels per day

(MBD) in November to 800 thousand barrels per day (kbd) in December and then to only 575 kbd in January.

US refiners suffered the most from the Venezuelan strike. More than half of Venezuelan oil exports are shipped to the United States. More than three quarters of Venezuelan exports may reach the United States once transshipments from offshore refineries are included. When the strikes took place, other countries responded by increasing production, but it took time for the replacement oil to reach the United States. Meanwhile, stocks fell.

Unfortunately, the strikes occurred when US inventories were already low. At the end of November 2002, private stocks in the United States totaled 288 million barrels, 20 million barrels fewer than in the previous November. Inventories fell further during December, January, and February.

Oil prices rose as stocks dropped, following a well-understood and well-documented pattern. Commodity prices tend to decline when inventories increase and rise as stocks fall. Since the end of November 2002, the spot price of WTI crude has risen from \$27 to \$37 per barrel. The rise in crude prices added at least 24 cents per gallon to the price of gasoline and heating oil. As I indicate below, other events associated with the crude price increase added a further 9 cents per gallon to product prices.

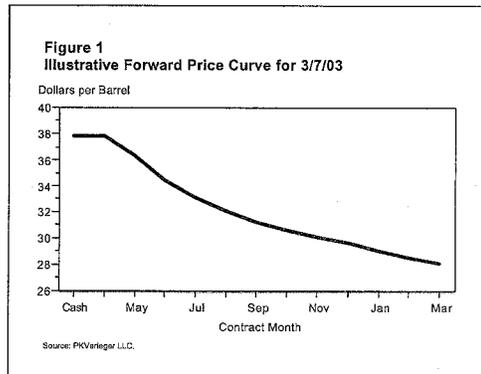
As the magnitude of the strike became evident, many called for release of SPR oil. These pleas were rejected by the Bush administration on the basis that the SPR is reserved for addressing shortages. The question here is "how would prices have developed had SPR oil been made available promptly in response to the Venezuelan strikes?" Answering this question requires a model of the forward price curve of oil.

### **The Forward Price Curve**

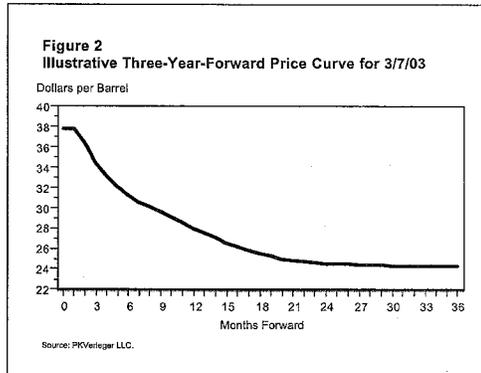
Analyses of commodity market behavior focus on forward price curves. Modeling these curves provides a method for linking underlying fundamental factors such as supply, demand, and inventories for those commodities governed by very inelastic price elasticities of demand and

supply. For items such as oil, the forward price curve is the melody and spot prices but a grace note.

Figure 1 shows part of the forward price curve for WTI on March 7. For convenience I show only the spot price and twelve future months. From Figure 1, one can observe that the cash price for crude was \$37.77 per barrel. One can also observe that one could buy oil for delivery in the months from April 2003 to March 2004. The graph shows that March 2004 crude sold for \$28.04 per barrel.



The actual curve extended out six years to December 2009. Crude for delivery in 2009 was quoted at \$24.21 per barrel. Figure 2 shows a three-year version of the same curve. In this graph, the forward months are numbered and not named, beginning with 1 for the first forward month (April 2003) and ending with 36 for the three-year-forward crude (March 2006).

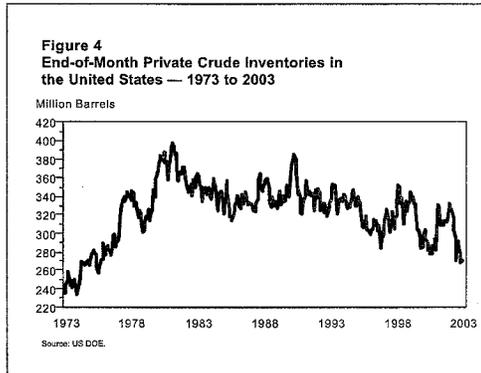
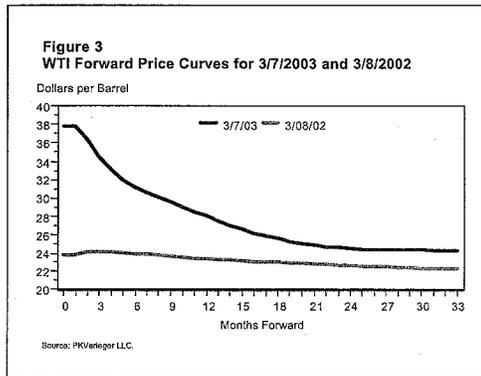


Economists recognize that the forward price curve will move as market conditions change. The principal determinants of the curve's shape are inventory levels and, to a lesser extent, speculative activity (speculators are also referred to as scalpers in the commodity literature). Here we focus on the role of inventories.

Figure 3 compares the shape of the forward curve on March 7, 2003, with the curve observed on March 8, 2002. The

difference is noticeable. In March 2002, three-year-forward crude sold for \$22.20 per barrel. In March 2003, three-year-forward crude sold for \$24.40. The big difference, though, is observed in the spot price. A year ago, one could acquire spot crude for \$23.70. On March 7, 2003, spot crude cost \$37.77.

Inventory levels explain the difference in spot prices between March 2002 and March 2003. In March 2002, tanks at US refineries held 317 million barrels. Twelve months later, they held only 271 million barrels. As can be observed from Figure 4, crude oil stocks are near a thirty-year low.



The model of the forward price curve I developed captures the relationship between inventories, market expectations, and speculation on the shape of the forward price curve. The methodology underlying the model is based on the prior research of Working (1949), Brennan (1958), Williams (1986), and Wright and Williams (1991). These authors have developed models that link price spreads (differences between spot and forward prices) to inventories. I developed a model that predicts spreads. I begin at the right side of the forward price curve with the two-year-forward price and then predict each of the spreads, adding them one at a time until I have completed the curve.

I show in Figures 5 and 6 (page 6) the model's prediction of the forward price curve for March 8, 2002, and March 7, 2003. The predictions fall close to the actual curves.

### Measuring the Impact of an SPR Release

A release of oil from strategic reserves would affect the shape of the forward price curve in three ways. First, it would lead to higher inventory levels unless oil-exporting countries cut production.<sup>1</sup> Second, it would change expectations regarding future prices. Lastly, release of strategic stocks would alter speculator expectations.

Start with the impact on stocks. Stocks increased by almost 12 million barrels in the fall of 2000 when the Clinton administration sold 30 million barrels from the SPR to ease market pressures. A similar response would have been observed had the Department of Energy (DOE) released stocks when production in Venezuela collapsed. The output loss from Venezuela was 2.2 MBD in December and 2.3 MBD in January. The aggregate loss of supply was 140 million barrels. The US probably lost around 90 million barrels directly and indirectly, although some of the supplies were replaced by exports from other countries. Reported company stocks dropped by 18 million barrels from the time the strike began — and from much higher levels earlier in the year.

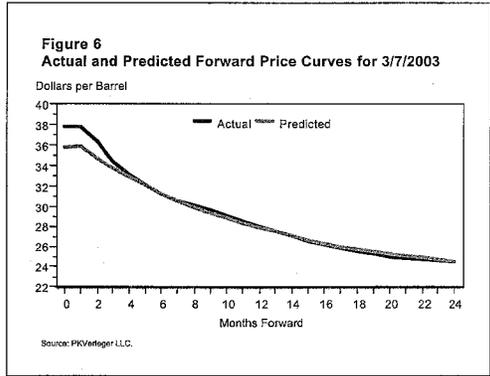
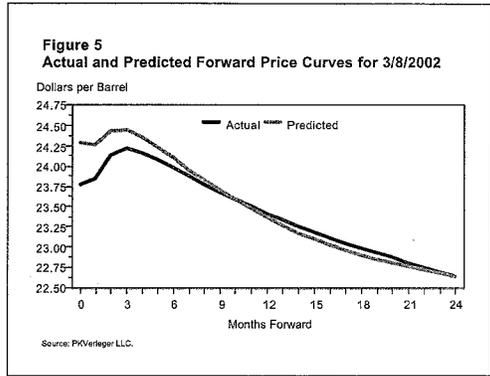
<sup>1</sup> The threat that producing countries might retaliate to a stock release has always constrained energy policy officials. However, the constraint is more imaginary than real as long as releases are made to stabilize prices. For example, Saudi oil minister Naimi characterized the US decision to release strategic stocks at a time of high prices in September 2000 as similar to OPEC's decision to adjust production to keep prices within a range. He noted, "There really was no harm to a release" as long as the purpose was to steady prices. (*Argus Global Markets*, October 8, 2000, p. 3)

The strike also affected expectations regarding future prices. In general, expectations are measured from the price quoted on the futures exchange. The chairman of the Federal Reserve Board has said he watches the four-year-forward price. Others watch the one or two-year-forward price. For the purpose of this paper, the two-year-forward price probably provides a good indication of the expectations of market conditions after the second Gulf war ends.

Between the end of November 2002 and March 7, 2003, the two-year-forward price rose from \$23.10 to \$25.55 per barrel. A year earlier, the same forward price was \$21.60.

Finally, the shape of the forward price curve is determined by speculation. At the end of November 2002, speculators were inactive. However, they became very active buyers of oil once the strikes began and the DOE indicated it would not use strategic reserves.

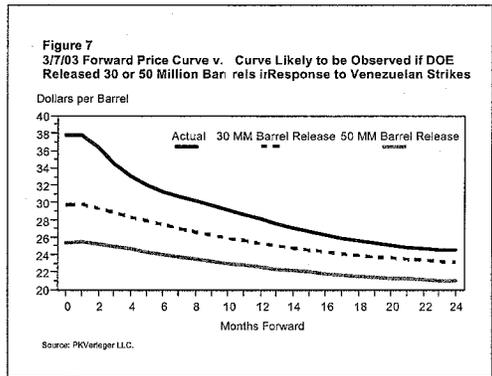
These factors were reflected in two separate simulations of the forward price model.



In the first simulation, I assumed that the DOE had responded to the strikes by releasing 15 million barrels per month in December and January to compensate for the lost Venezuelan crude. I also assumed that the release would have changed expectations of the two-year-forward price, which was assumed to remain at \$22.15 per barrel.

In the second simulation, I assumed that the DOE had responded to the loss of supply from Venezuela by releasing 50 million barrels per month. This larger release was assumed to depress expectations from \$23.15 to \$21 per barrel.

The results of the two simulations are shown in Figure 7. In the first case, spot prices drop from \$37 to \$30 per barrel. In the second, prices decline from \$37 to \$25 per barrel. The results confirm that proactive action would have cut spot prices by between \$8 and \$13 per barrel.



**Impact on Product Prices**

Ordinarily one calculates the impact of lower crude prices on product prices by dividing the change in crude prices by 42 because there are 42 gallons in a barrel. Thus, one might predict that retail prices would be reduced by between 20 and 32 cents per gallon. However these are not ordinary times.

Many refiners today purchase protection against a sudden drop in crude prices because they do not want to be caught selling gasoline manufactured from \$40 per barrel crude when prices have dropped to \$20 per barrel. The risk of such declines increases as crude prices rise because the

SPR holds more than 600 million barrels of crude — twice as much as the private sector. Thus, companies must become more concerned about a sudden drop in prices as prices escalate.

The weaker financial refiners created by FTC-mandated divestitures (Tesoro, Frontier, Valero, and, to a lesser extent, Premcor) are particularly vulnerable at times of high prices. To maintain their minimal credit ratings and to obtain letters of credit, they must hedge.

Refiners can hedge against higher crude prices by purchasing puts with strike prices equal to or near the price of the crude acquired.<sup>2</sup> The cost of these puts must be added to the cost of crude. During 2002, the cost of such insurance ran around 2 cents per gallon. However, the cost has increased sharply with the rise in crude prices. At the end of February, the cost was 10 cents per gallon (see Table 1).

The increase in the cost of purchasing puts from November to March represents a second cost associated with the failure to use the Strategic Petroleum Reserve. I put the incremental cost at 6 to 9 cents per gallon.

Table 1. Cost of Hedging Crude Oil Purchases Using Puts — Implied Cost of Hedging a Barrel of Crude Purchased on the Fifteenth of the Month for Approximately 40-45 Days

Days	Put Price (\$/bbl)	Put Price (¢/gal)
Jan 2002	0.95	2.3
Feb 2002	1.02	2.4
Mar 2002	1.22	2.9
Apr 2002	1.29	3.1
May 2002	1.69	4.0
Jun 2002	1.18	2.8
Jul 2002	1.10	2.6
Aug 2002	1.51	3.6
Sep 2002	1.13	2.7
Oct 2002	0.90	2.1
Nov 2002	1.71	4.1
Dec 2002	1.31	3.1
Jan 2003	2.32	5.5
Feb 2003	4.19	10.0

Source: PKVerleger LLC.

### Risks Associated with Using the Strategic Reserve Today

The failure to use the SPR in December or January has resulted in large increases in crude and product prices. These increases have also caused refiners and crude producers to purchase large amounts of price protection in the form of puts. These puts now make it difficult to release strategic stocks because such a release could create a financial crisis.

The financial risk is created because the firms that write puts sell futures to hedge their position.

The number of futures sold will vary depending on the difference between the price of crude and the strike price of the put. As oil prices fall, the firms that have written the puts will sell more

<sup>2</sup> A put is effectively an insurance policy. If prices fall below the strike price, the writer of the put pays the buyer the difference between the strike price and the actual price. For example, if a refiner purchased a \$36 per barrel put and prices fell to \$30, it would be paid \$6 per barrel.

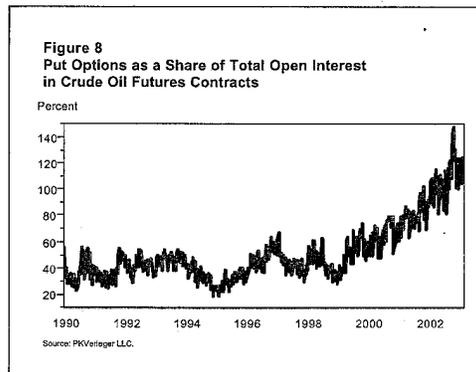
futures, putting downward pressures on oil prices. This activity, referred to as “dynamic hedging,” could cause an oil price collapse. This potential has been realized in other markets. For example, the October 1987 stock market collapse occurred in large part because firms had written “portfolio insurance.” The firms that had written puts on the stock market started to sell futures when stock market prices fell. Their sales caused stock prices to fall further.<sup>3</sup>

Sales of SPR oil could precipitate a similar collapse under circumstances where

- The number of puts outstanding relative to the size of the futures market was large and
- The sales pushed the writers of puts close to price levels that would force the sales of large numbers of futures.

Today we do not have precise information on the number of puts outstanding because most transactions are done directly with banks or financial institutions and are not reported. These are called over-the-counter or

OTC options. However, the limited information available reveals that the number of puts sold on the primary regulated exchange, the New York Mercantile Exchange, is large relative to open interest in futures markets. This can be seen from Figure 8, which shows open interest in put options as a share of open interest in crude futures. One



<sup>3</sup> Sales of futures contracts can, under certain circumstances, create rapid price increases or decreases if there is an absence of counterparties willing to take the opposite side of the transaction. The problem occurs because futures markets are bilateral contracts: for every seller there must be a buyer. Prices can drop to zero or very low levels if everyone is convinced that prices are moving down. This creates a problem for firms that have written put options because the financial strategies they use assume they will be able to sell more futures as prices fall. If there is no market, they could face financial ruin. It was precisely such a process that brought down Long Term Capital Management (see Lowenstein, 2000, especially Chapter 8).

needs to be concerned, however, if one assumes there are as many OTC options outstanding as NYMEX options and if one assumes that the writers of OTC options will sell futures.

One also needs to worry because most OTC options are written at oil prices above \$30 per barrel.

As can be seen from Table 2, more than half the April, May, and June options are written for strike prices below current prices but above

\$30. This risk of financial collapse was not a major concern at the time of the first Gulf war because energy derivatives represented a modest share of world oil production and consumption. The situation is different today. Outstanding derivatives for crude oil and products now may equal two or three years of production. Thus, it is entirely possible that the financial losses associated with a drop of oil prices into the teens could exceed \$200 billion.

Table 2. Cumulative Open Interest in NYMEX Puts on 3/7/03 by Contract and Strike Price as a Percentage of Open Interest in the Underlying Futures Contract

Strike Price (\$/bbl)	April (%)	May (%)	June (%)
37.50	2.4	0.0	0.1
35.00	12.0	7.8	0.1
32.50	22.6	19.0	20.0
30.00	47.9	59.2	50.3
27.50	67.6	88.1	77.5
25.00	83.0	121.9	117.2
22.50	98.4	138.0	161.2
20.00	111.6	161.8	201.8
17.50	115.3	171.0	218.0
15.00	120.9	174.9	224.5
Note: Settlement of Underlying Futures on 3/7/03 (\$/bbl)	37.78	36.35	34.43

Source: PKVerleger LLC.

This suggests that the Department of Energy must use great care in structuring its release of SPR oil. The DOE could easily trigger a rapid, "delta margining" collapse in crude oil if too much oil were put on the market when the war starts.

To address this risk, the Department of Energy officials and their colleagues at the International Energy Agency need to adopt a program of small but frequent sales from strategic stocks. The risk of causing a serious drop in crude prices could be moderated by announcing a first sale of, say, 20 million barrels and then declaring that a second, third, and possibly fourth sale could follow if conditions in world markets required such an action.

### Conclusion

Officials at the Department of Energy missed a golden opportunity to moderate the recent increase in oil prices when they failed to compensate for the strikes of oil field workers in Venezuela. Had they acted, gasoline prices would have been as much as 25 to 40 cents per gallon

lower. The hands of DOE officials are now tied, though, because a release of large amounts of oil at this point could trigger an unwanted price collapse.

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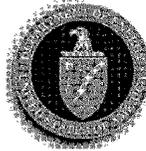
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**Department of Energy Deputy Secretary Kyle McSlarrow Statement On Democrat Report On Strategic Petroleum Reserve**

WASHINGTON, DC - "This report misunderstands the facts and the purpose of the Strategic Petroleum Reserve.

"In 2002 the Department of Energy took delivery of approximately 40 million barrels of crude from the market for the Strategic Petroleum Reserve. These deliveries reflected the return of oil released from the Reserve in 2000, as well as action on the President's directive to fill the Reserve to capacity.

"To put this into context, the global market for crude oil in 2002 was approximately 28 billion barrels. The amount used to increase the size of the reserve in 2002 is fourteen one-hundredths (0.0014 percent) of one-percent of the global market.

"In response to the disruption of oil supplies from Venezuela, Secretary Abraham has deferred receipts of oil since December of 2002, totaling 18.5 million barrels, requiring that those who owe oil to the Reserve will now have to supply an additional 2.8 million barrels at a future date.

"President Bush's directive to fill the Reserve, and Secretary Abraham's decision to defer that fill during the most acute period of the Venezuela crisis have had only one result: strengthening the energy security of the United States," said Deputy Secretary McSlarrow.

**Media Contact:** Drew Malcomb, 202/586-5806

Release No. PR-03-050

Release Date: March 5, 2003

[Back to Previous Page](#) >

**U.S. Strategic Petroleum Reserve:  
Increasing Costs to Consumers  
But Not Overall U.S. Energy Security**

261

Minority Staff  
Permanent Subcommittee on Investigations  
March 14, 2003

**APPENDIX 4**  
*Additional Documents - #4*

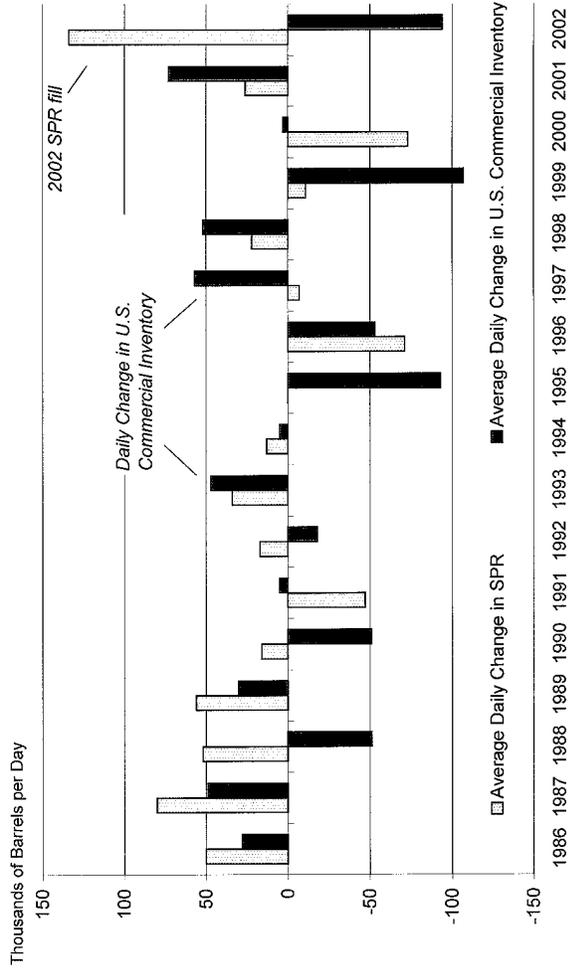
**Fill Rate of 100,000 Barrels/Day Can Have Significant Market Impact**

- Comparing SPR fill rate to daily global production is misleading because 75-80% of global production never reaches U.S. and most is unsuitable for SPR.
- 100,000 b/d is significant rate compared to balance between global supply and demand, which is typically within several hundred thousand b/d.
- Average daily change in U.S. commercial inventories is less than 110,000 barrels/day.
- DOE recently deferred deliveries “to calm markets” and to “help ensure that the deliveries will not negatively affect the oil market.”

262

**Oil Supply and Demand in U.S. Are Closely Balanced**

-- On Average, U.S. Commercial Inventories Vary by About 50,000 Barrels/Day  
 -- Removing 135,000 Barrels/Day From the Market Affects Commercial Inventory Levels



Source of data: Table S2, EIA Petroleum Supply Monthly, 2003  
 Chart prepared by U.S. Senate Permanent Subcommittee on Investigations Minority Staff, March 2003

Table S2. Crude Oil Supply and Disposition, 1986 - Present  
(Thousand Barrels per Day, Except Where Noted)

Year/Month	Supply					Unaccounted for Crude Oil <sup>a</sup>	Disposition Crude Losses
	Field Production		Imports				
	Total Domestic	Alaskan	Total	SPR	Other		
1986 Average	8,680	1,867	4,178	48	4,130	139	(e)
1987 Average	8,349	1,962	4,874	73	4,601	145	(s)
1988 Average	8,140	2,017	5,107	51	5,055	196	(s)
1989 Average	7,613	1,874	5,843	56	5,787	200	(s)
1990 Average	7,395	1,773	5,894	27	5,867	258	(s)
1991 Average	7,117	1,798	5,782	0	5,782	195	(s)
1992 Average	7,171	1,714	6,083	10	6,073	258	(s)
1993 Average	6,847	1,582	6,787	15	6,772	168	(s)
1994 Average	6,692	1,559	7,063	12	7,051	256	(s)
1995 Average	6,590	1,484	7,230	0	7,230	193	(s)
1996 Average	6,485	1,393	7,508	0	7,508	215	(s)
1997 Average	6,482	1,298	8,225	0	8,225	149	(s)
1998 Average	6,292	1,175	8,706	0	8,706	115	(s)
1999 Average	5,881	1,050	8,731	8	8,722	191	(s)
2000 January	5,784	1,024	7,829	3	7,825	362	0
February	5,852	1,031	8,318	17	8,301	-14	0
March	5,918	1,013	9,790	0	9,790	412	0
April	5,854	1,008	9,341	0	9,341	298	0
May	5,847	966	9,085	0	9,085	303	0
June	5,823	925	9,533	16	9,518	143	0
July	5,739	913	9,398	16	9,383	471	0
August	5,789	914	9,939	0	9,939	127	0
September	5,758	882	9,484	0	9,484	-159	0
October	5,809	960	8,969	32	8,937	70	0
November	5,833	966	8,913	17	8,896	-1	0
December	5,855	1,010	9,229	0	9,229	-86	0
Average	5,822	970	9,071	8	9,062	165	0
2001 January	5,799	990	8,933	32	8,901	392	0
February	5,780	977	8,659	0	8,659	25	0
March	5,880	1,009	9,603	15	9,588	64	0
April	5,853	989	10,111	0	10,111	304	0
May	5,829	937	9,865	39	9,825	70	0
June	5,766	935	9,105	0	9,105	123	0
July	5,749	927	9,532	15	9,533	243	0
August	5,725	928	9,383	0	9,383	19	0
September	5,709	892	9,339	0	9,339	44	0
October	5,746	895	9,211	0	9,211	198	0
November	5,881	1,033	9,320	17	9,302	-155	0
December	5,887	1,046	8,839	18	8,821	61	0
Average	5,801	963	9,328	11	9,318	117	0
2002 January	E 5,934	E 1,036	8,646	33	8,613	298	0
February	E 5,938	E 1,031	8,642	59	8,583	123	0
March	E 5,914	E 1,036	8,650	0	8,650	94	0
April	E 5,887	E 1,009	9,140	0	9,140	270	0
May	E 5,908	E 1,002	9,205	16	9,189	385	0
June	E 5,827	E 1,019	9,222	17	9,212	79	0
July	E 5,773	E 931	9,010	0	9,010	315	0
August	E 5,827	E 965	9,545	0	9,545	-174	0
September	E 5,378	E 886	8,796	0	8,796	18	0
October	E 5,871	E 983	9,495	0	9,495	-92	0
November	E 5,792	E 908	8,561	34	8,527	-148	0
December	RE 5,894	RE 1,010	R 8,519	R 34	R 8,585	R 173	0
Average	RE 5,817	RE 984	R 9,047	16	R 9,031	R 112	0
2003 January*	PE 5,740	PE 991	E 8,510	E 0	E 8,510	E 51	E 0

a. Unaccounted for crude oil represents the difference between the supply and disposition of crude oil. Preliminary estimates of crude oil imports at the National level have historically understated final values by approximately 50 thousand barrels per day. This causes the preliminary values of unaccounted for crude oil to overstate the final values by the same amount.  
 b. A negative number indicates a decrease in stocks and a positive number indicates an increase.  
 c. Stocks are totals as of end of period.  
 d. Crude oil stocks in the Strategic Petroleum Reserve include non-U.S. stocks held under foreign or commercial storage agreements.  
 Footnotes continued on following page.

Table S2. Crude Oil Supply and Disposition, 1986 - Present (Continued)  
(Thousand Barrels per Day, Except Where Noted)

Year/Month	Disposition					Ending Stocks <sup>c</sup> (Million Barrels)		
	Stock Change <sup>b</sup>		Refinery Inputs	Exports	Product Supplied	Total	SPR <sup>d</sup>	Other Primary
	SPR <sup>d</sup>	Other						
1986 Average	59	28	12,716	154	49	843	512	351
1987 Average	89	49	12,854	151	34	890	541	349
1988 Average	52	-51	13,246	155	40	890	560	330
1989 Average	58	30	13,401	142	28	921	580	341
1990 Average	16	-51	13,409	109	24	908	568	323
1991 Average	-47	5	13,301	116	18	893	569	325
1992 Average	17	-18	13,411	89	13	893	575	318
1993 Average	34	47	13,613	98	19	922	587	335
1994 Average	13	5	13,866	99	9	929	592	337
1995 Average	(s)	-93	13,973	95	7	895	592	303
1995 Average	-71	-53	14,195	110	6	850	566	284
1997 Average	-7	57	14,662	108	2	868	583	305
1998 Average	22	52	14,889	110	0	895	571	324
1999 Average	-11	-107	14,804	118	0	852	587	284
2000 January	41	-20	13,779	176	0	852	568	284
February	30	68	14,028	30	0	855	569	286
March	1	362	14,813	144	0	867	569	297
April	0	225	15,053	124	0	873	569	304
May	0	-294	15,494	34	0	864	569	295
June	-17	-136	15,643	9	0	860	569	291
July	-47	-272	15,819	15	0	853	570	282
August	33	164	15,640	17	0	859	571	287
September	-34	-313	15,407	23	0	848	570	278
October	-189	(s)	15,229	9	0	842	564	278
November	-568	285	15,023	2	0	834	548	286
December	-220	-30	15,232	16	0	826	541	286
December Average	-73	3	15,867	50	0	—	—	—
2001 January	32	285	14,789	18	0	836	542	294
February	(s)	-424	14,813	24	0	824	542	282
March	-20	841	14,849	37	0	851	542	309
April	2	734	15,536	5	0	873	542	331
May	30	-71	15,763	64	0	872	543	328
June	0	-671	15,850	15	0	862	543	308
July	15	149	15,369	11	0	857	544	313
August	0	-160	15,259	28	0	852	544	308
September	34	45	15,005	9	0	854	545	309
October	14	127	15,002	11	0	858	545	313
November	71	-35	15,001	9	0	860	547	312
December	94	-7	14,586	12	0	862	550	312
December Average	26	73	15,128	20	0	—	—	—
2002 January	141	273	14,453	11	0	875	555	320
February	141	223	14,274	4	0	897	560	327
March	50	149	14,452	8	0	893	561	331
April	176	-217	15,332	8	0	892	567	325
May	146	47	15,298	7	0	898	571	326
June	173	-313	15,229	5	0	893	576	317
July	67	-426	15,434	33	0	882	579	303
August	121	-257	15,225	9	0	876	582	296
September	166	-848	14,868	7	0	857	587	270
October	77	691	14,301	4	0	881	590	292
November	209	-132	15,119	10	0	883	598	288
December	R 103	R -316	14,889	R 2	0	R 677	599	R 278
December Average	R 134	R -94	14,926	R 9	0	—	—	—
2003 January*	E 7	E -159	E 14,442	E 10	E 0	E 873	E 599	E 274

Footnotes continued.  
R = Revised data. (s) = Less than 500 barrels per day. E = Estimated. PE = Preliminary estimate. RE = Revised estimate.  
SPR = Strategic Petroleum Reserve.  
— = Not Applicable.  
\* See Summary Statistics Explanatory Note 1.  
Notes: • Crude oil includes lease condensate. • Italics denote estimates based upon preliminary data. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.  
Source: See Summary Statistics Table and Figure Sources.

DRAFT June 11, 2002

STAFF DISCUSSION PAPER  
USING A PRICE SENSITIVE RULE FOR DETERMINING THE DELIVERY  
DATES OF STRATEGIC PETROLEUM RESERVE OIL

ISSUE: INFORMATION: Prior to September 11, 2001, the Strategic Petroleum Reserve (SPR) Office regularly renegotiated delivery dates for oil to be delivered to the SPR in exchange for more oil. In February 2002, the Secretary announced oil would be delivered to the SPR according to contract without further renegotiations. The status quo ante business model has several definable and measurable benefits and is advocated by the SPR Office. While plausible reasons can be imagined for wanting to stay with the contracted schedule without deviation, the rationale has not been stated or subjected to scrutiny.

DISCUSSION: The attached paper was prepared by the SPR Office with the Energy Information Administration. The SPR Office demonstrates it has reduced the cost of acquisition \$175 million over two years by renegotiating delivery schedules. Given EIA's outlook for market volatility, if allowed, the SPR Office is likely to continue to reduce acquisition costs substantially before the SPR is filled to capacity in 2005.

The SPR Office emphasizes that a flexible policy of renegotiating deliveries in response to market prices is responsive to the legislation, which sets a goal of "minimizing impacts of market forces." It is also supported by the common sense notion that we should acquire less oil when prices are high and more when they are low.

The SPR Office argues oil acquisition schedules should consider the state of the economy. Since the balance of trade is negative, the Federal budget is in deficit, the dollar is weakening against other currencies, and the nascent economic recovery is fragile, negotiating deferrals of oil deliveries would be a welcome economic stimulation, albeit modest in scope.

The SPR Office notes that the facilities require occasional maintenance, and a schedule allowing the flexibility of some down time at each site is optimal.

Finally, the SPR Office highlights that the legislation requires "cost minimization," and cost reduction associated with deferrals will reflect well on the Department and help us in debating the issue of SPR expansion.

Champions of the current policy are unknown and there is no known record laying out arguments in support of a rigid fill schedule.

RECOMMENDATION: Since the prior business model for oil acquisition is financially superior to the current model, works counter to economic cycles, is familiar to contractors, is favored for logistics reasons, is in tune with legislated mandates, and allows the Government to take positive action when consumers are distressed by oil prices, the SPR Office recommends reconsideration of the decision not to renegotiate delivery dates of SPR oil.

Attachment

DRAFT JUNE 11, 2002

**Options for Filling the Strategic Petroleum Reserve**

**Background:** After the events of September 11, 2001, President Bush determined that the Strategic Petroleum Reserve should be filled to its capacity primarily using royalty oil from Federal leases on the Outer Continental Shelf. The SPR Office is receiving royalty oil from Department of the Interior leases on the Outer Continental Shelf as well as oil from earlier phases of a royalty oil transfer program. In addition the SPR is accepting oil being returned from the September 2000 exchange of 30 million barrels of oil from the Reserve.

Thirty-six million barrels of oil are scheduled for delivery in specific months from June 2002 through April 2003. Because of additional transfers from the Department of Interior, another million barrels per month will be delivered from November 2002 through April 2003. Beginning in May 2003, deliveries will stabilize at around 3.5 million barrels per month, based on the expected rate of transfers from Interior.

Although the contracts specify specific schedules for contractors to deliver oil, the Government has latitude to renegotiate delivery dates, thereby creating policy options. Prior to the events of September 11, 2001, the SPR Office routinely renegotiated delivery dates if it was in the Government's financial interest. The business model of trading more delivery time for increased volumes of oil is characterized by reduced costs, conformance with normal private sector practices, logistical flexibility to accommodate busy terminals or maintenance requirements at the sites, a desirable tendency to be counter-cyclical to oil prices and economic cycles, and acceptance by all of the companies with contracts.

In February 2002, the SPR Office received a request to defer deliveries of 9 million barrels of oil for a year. The initial offer of extra oil in consideration of the deferral was 750,000 barrels of oil valued at \$18 million. Rather than immediately negotiating the change, in order to assure itself of conformance with the President's priorities, the SPR Office asked the Administration for guidance prior to negotiating the deferral. The Secretary, during a press conference after a meeting at the White House, announced the Department intended to take oil deliveries on schedule, without deferrals, but did not elaborate on the reasons for the change.

The most plausible explanation for this policy change would have been a desire to have as much oil in the SPR as fast as possible for national security or energy security reasons. However, the staff of the SPR Office has not been able to confirm that there is any champion of that argument in the Administration. In the event the policy is not supported by champions or a defensible rationale, the alternative option of renegotiating deliveries to take advantage of market conditions deserves re-examination.

## Options

Add Oil to the Reserve as It Becomes Available Under Contract (status quo)

The most straightforward option is to take delivery of all oil owed to the SPR according to contract schedules and to inject it as it becomes available. The primary appeal of this approach is that inventory increases every month, and inventory will, therefore, be at its highest possible level at all times (absent funds to buy oil) until the Reserve is filled in 2005.

The primary criticisms of this option are:

It ignores market signals: Should the SPR doggedly add oil to the Reserve, irrespective of market conditions, the average cost per barrel will rise and the Federal deficit will increase.

It ignores economic conditions: Whatever impact the acquisition process might have on prices, it is allowed to happen whether the economy is robust or bordering on recession.

It is not consistent with a high sense of urgency to fill the Reserve, since the option of buying oil using appropriated funds could fill the Reserve to capacity much faster.

It does not allow flexibility to adjust deliveries because of oversubscribed terminal services or the time needed to perform maintenance at the SPR sites.

It ignores public perceptions. If gasoline or heating prices rise quickly to painful levels during the period of SPR fill, the Department will appear indifferent to the public's plight by insisting on current deliveries.

Alternative Fill Rate Rules

There are many variations to the current rule of steady acquisition which propose accelerating fill when prices are low and slowing fill when prices are high. Through 2001, the SPR Office assessed offers from contractors to give the SPR more oil in exchange for later delivery dates. If the offers exceeded negotiating target prices established by the SPR contracting office, the offers were accepted. That rule gained the SPR seven million barrels of oil over two years without fiscal cost and is advocated by the SPR Office.

There are potential criticisms of this option:

Market interference: If the Government does not follow a simple rule for acquiring oil at steady rates, it will be actively influencing prices, a practice foresworn by the Administration. Alternatively, critics might argue, even if market intervention were not objectionable in principle, the fill rate of the SPR is too little to have more than marginal impacts on price, and is, therefore, too weak to use as policy tool.

Lack of economic impact: Even if the SPR oil fill caused an increase in prices (or the deferral decreased them), the change is insufficient to affect macroeconomic conditions, and, therefore, this should not be a consideration.

Delayed fill: We should get as much oil in the Reserve as rapidly as possible. Alternatives that potentially postpone fill are dangerous for the primary objective.

Responses to Criticisms of a Business Model Involving Delivery Date Renegotiations

**Markets and Government Participation:** The SPR Office acknowledges the concern that the Government should not interfere with markets. It asserts regular price and delivery date renegotiations do not manipulate the market, but instead constantly remark the contracts to market value, and, consequently, conform with the goal of the Energy Policy and Conservation Act that the acquisition should “minimize impact on market forces.”

Crude oil markets are free to move according to the dictates of many players, however, they are not perfectly free markets. OPEC members, exporting countries cooperating with OPEC, and Iraq collude to set production volumes and prices. If the resulting cartel-determined market prices were always high, low, or consistent, there would be offsetting benefits to this interference in the market. Instead, OPEC *et al* act erratically, sometimes driving prices low to make high-cost U.S. oil production uneconomic as occurred in 1998, other times keeping prices too high, thereby hindering economic growth, as in 2000 and 2001. Despite OPEC’s contention that it seeks price stability, history suggests OPEC actually enforces production stability, allowing prices to swing widely. The simple rule of taking SPR oil deliveries as they are contractually due exaggerates this OPEC dictated price pattern, since the SPR takes the same volume regardless of price. It is a business model different from that followed by all private market participants, and if followed by a significant number of market participants would lead to explosive price swings.

The SPR Office proposes a return to the SPR oil acquisition business model, allowing deferrals which will always be counter-cyclical to OPEC induced price volatility. Since there would be consistency in our behavior, markets would not be surprised, and contractors would be comfortable knowing that the Government was acting in a rational and business-like manner. Acquiring less oil in high price markets and more oil in low price markets is precisely such behavior. It would have much less impact on market forces than does the practice of ignoring price and acquiring just as much oil at high prices as at low prices.

**Inconsequential Volumes:** Critics argue the impact of SPR fill on oil markets is insignificant based on an examination of daily production and consumption. The SPR Office responds that is the wrong perspective. Looking at the SPR from the perspective of daily supply and demand, the SPR fill rates appear inconsequential; the fill rate is 100,000-170,000 barrels per day compared to world production and consumption of 75 million barrels per day. However, when OPEC countries are determined to maintain

discipline in their export quotas, the cumulative impact of filling the SPR becomes significant, especially relative to U.S. and Atlantic basin inventories. If the SPR inventory grows, and OPEC does not accommodate that growth by exporting more oil, the increased demand comes at the expense of commercial inventories. Most analysts agree that oil prices are directly correlated with private inventories, and a drop of 20 million barrels (equal to SPR fill) over a 6-month period can substantially increase prices. The EIA analysis later in this paper alludes to the power of inventory changes to affect prices within a few weeks and months, and the price impact of the weekly release of API and EIA inventory statistics testify to the power of inventory change in determining prices. A variation of 3 or 4 million barrels from expected inventory can change prices more than a dollar per barrel during a day. Clearly, a shift in private inventories to SPR inventory could have a substantial price impact.

**Economic Impacts:** Critics argue that managing the SPR fill program, even if counter-cyclical is inconsequential as a tool for economic management. The SPR Office concedes the relative potential for affecting the massive U.S. economy is small. Nevertheless, the impacts of a well managed program are all in the correct direction, and there is no anticipated harm.

Past studies of the SPR recognize three benefits of selling the oil at the time of an emergency. The most important of which is referred to as the Gross Domestic Product (GDP) effect. When oil supplies are disrupted and oil prices spike, the emergency nature of the situation causes the domestic economy to slow for a variety of reasons. Virtually every recession since World War II has been preceded by an oil supply disruption. However, cyclical oil price changes, not caused by disruptions, do not have the same impact on economies. This last point is cited by proponents of the option of filling the Reserve at a constant rate.

The SPR Office agrees that cyclical price changes do not have the same economic effect as price shocks. Nevertheless, the SPR Office advocates counter cyclical activities by the agencies of government that have tools for that purpose. Since it is known that selling oil is an economic stimulant and removing oil from the market is an economic depressant, it seems that it would be good public policy if oil acquisition occurred during periods of robust growth and were deferred when the economy is contracting.

There are a number of reasons why the deferral of oil acquisition may help the economy, at least directionally, if not forcefully:

- The oil price change will prevent an excessive redistribution of domestic purchasing power away from consumers of petroleum products. Based on 20 million barrels per day of consumption, a \$1 per barrel price drop will preserve economic purchasing power of over \$7 billion per year – equal in magnitude to a modest tax cut. In the current fragile economic expansion characterized by strong consumer demand but weak capital spending, a falling stock market and uncertain investment environment, providing motorists, airlines, truckers and railroads with extra buying power is good economic policy.

- If oil imports for the SPR are delayed, the balance of trade improves in the short term. In the current circumstances, a balance of trade improvement would be welcome. Specifically, the U.S. dollar is falling in value, which may have very negative impacts for the economy in the form of inflation. Reducing oil imports, and the imbalance in trade takes pressure off the U.S. dollar, and reduces the incentive for the Federal Reserve to increase interest rates with the goals of suppressing inflation and supporting the dollar. While this effect is admittedly small, it is directionally helpful.
- There are two other benefits associated with emergency oil sales that also apply to a normal market. First, all oil coming into the SPR is imported, and the price change caused by a reduction in oil demand lowers the cost of imports. If deferrals of SPR deliveries were to reduce prices by \$1 per barrel, the import cost of oil to the U.S. will drop \$10 million per day, or \$3.6 billion per year. This is a direct measurable benefit to the American people.
- The last benefit of delaying SPR oil deliveries is the gain to the Treasury of acquiring the oil at a lower price. If the SPR can average down the price of oil it injects in the Reserve by \$1 per barrel between now and 2005, the deficit will be lessened for three years and the Treasury will be better off by \$125 million.

**Programmatic Considerations:** There are programmatic reasons for wanting to lower the average cost of oil added to the Reserve.

- As a matter of public stewardship, the SPR has been (sometimes fairly) accused of buying oil at high prices and selling low. If the SPR can use a rule for oil acquisition that lowers the average cost, it is more likely the program can show a financial profit rather than a loss.
- The Department is planning a study of SPR size either of its own volition, or in response to a provision in the Senate Energy Bill that is about to go to conference, requiring such a study within 6-months of enactment. In the cost benefit analysis associated with that study, the price of oil is a powerful determinant of the outcome of the study. If the Department can institute a rule for acquisition that lowers its cost, the projected net benefits will improve and the optimal Reserve size will increase. The opportunity for this cost reduction is documented in past deferrals. Using its business model to renegotiate delivery dates for SPR oil that was owed to the Department in 2000 and 2001, the SPR Office was able to raise 7 million barrels of premiums in exchange for the delays, on a base of less than 50 million barrels of oil. At a current market value of \$25 per barrel, the deferrals reduced costs by \$175 million. Reducing the cost of oil acquisition will radically alter the terms of debate for any future expansion of the Reserve.

#### Public Perceptions

Earlier this year, gasoline prices rose quickly, and elicited public concerns. As the following EIA analysis makes clear, gasoline price volatility may characterize the entire driving season. The current policy of injecting oil in the Reserve according to schedule is completely indifferent to public concerns of product price volatility. By comparison, the status quo ante policy of renegotiating delivery schedules, directly acts to relieve demand when prices are high and to replace it when prices are low, satisfying the public that the Government is taking some action in response to its plight.

**The Issue of Urgency to Fill:**

As noted above, a plausible argument against renegotiating delivery schedules is that there is urgency to fill the Reserve to its capacity. However, given the current outlook for OPEC exports, and commercial inventories, it appears to the SPR Office the Government should be indifferent to deliveries of the outstanding oil accounts receivable in 2002 or 2003. If in fact, a major event is likely to occur within the next year causing an energy supply emergency, it is better to have commercial inventories higher at the time of the emergency. Since OPEC is controlling exports rather than price, SPR fill in the short run comes at the expense of commercial inventories. From a different perspective, if it is important to fill the Reserve to its capacity by the 2005 target date, but not urgent to add to the inventory at any given time during 2002 or 2003, then the Department can both meet the scheduled completion date and enjoy the benefits of deferral. At this time no one has made a case that the current rate of fill is superior to a faster near-term rate due to urgency or a rate determined by market forces, which would be more economic, but implies deferrals. The urgency argument is also vulnerable to the criticism that if fill were truly urgent, the Administration would have asked for a supplemental appropriation to fill the Reserve to the limit of its capacity. Instead the pace is being determined by whatever volume of royalty oil becomes available; not a pace with which indicates urgency.

**Outlook for U.S. Oil Markets.**

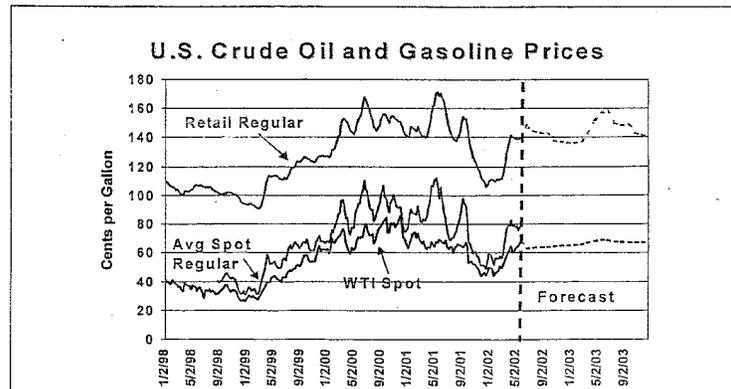
Since the SPR Office argues that the issue of whether to hold rigidly to contracted oil delivery schedules versus deferrals of deliveries is sensitive to the state of the economy and to the direction of the oil markets, the Energy Information Administration has performed an analysis of short-term petroleum markets. The following analysis details why the U.S. markets for gasoline and other products may be volatile this year if OPEC maintains tight adherence to its announced quotas and does not accommodate economic growth or seasonal demand fluctuations with more exports.

### The Global Oil Market in 2002

For the world oil market, 2002 has been an interesting year so far, with even more excitement expected later this year. Because of relatively weak demand in the fall of 2001 following the September 11 attacks in the United States, 2002 opened with relatively abundant crude oil and product inventories. However, with OPEC's decision (with cooperation from five non-OPEC countries – Russia, Norway, Mexico, Oman, and Angola) in late December 2001 to cut oil production further, beginning on January 1, 2002, the stage was set for a volatile 2002 global oil market. To better understand the events that have already occurred and may yet influence petroleum markets in 2002, let's look at the year quarter by quarter.

#### January – March

As 2002 began, crude oil markets were relatively flush with crude oil and product markets were amply supplied as well, in part due to the downturn in demand following the attacks on September 11. Gasoline prices were around \$1.10 per gallon for most of January and February. Residential heating oil prices hovered around \$1.16 per gallon throughout the remainder of the winter, much below the \$1.40 – 1.55 per gallon prices seen during the latter half of winter the year before. Jet fuel demand, largely due to a reduced number of flights, was down by more than 10 percent from year-ago levels throughout the first 3 months of the year. Distillate fuel and residual fuel demand was also down sharply from year-ago levels that were inflated due to very high natural gas prices in early 2001 and weather that was colder than this year. All of these factors pointed to an uneventful 2002 for oil markets.



But as we moved towards the end of the first quarter, there were signs that prices might become more robust than many analysts had previously expected. First, because of ample product stocks and warm weather, refiners reduced crude oil inputs such that by March, gasoline inventories were falling from the high end of the normal range to the middle of the normal range. Still, with distillate fuel inventories remaining near the upper end of the normal range, many analysts were still forecasting West Texas Intermediate (WTI) prices remaining close to \$20 per barrel for some time. In fact, in all of January and February, the daily spot price of WTI ranged between \$18 and \$22 per barrel. However, in March, factors that would point to rising prices began to appear. First, crude oil imports remained relatively flat from the February level, unlike the nearly 500,000 barrels per day and 1 million barrels per day increases seen in March 2000 and March 2001 respectively. With declining crude oil imports in the foreseeable future, an earlier, stronger-than-expected upturn in the U.S. economy, and unrest in the Middle East once again affecting global crude oil prices, WTI prices rose throughout March 2002 and ended the month above \$26 per barrel. Gasoline prices rose along with crude oil prices, rising by over 25 cents per gallon between February 25 and April 1. In retrospect it appears that the first quarter of 2002 “came in like a lamb but left as a lion.”

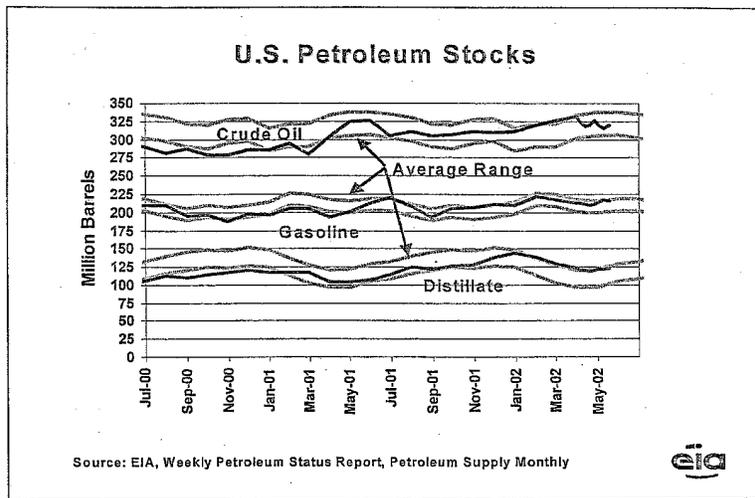
#### **April – June**

The second quarter started much like the first quarter ended, with unrest in Venezuela added to the equation. Additionally, Iraq began a self-imposed 30-day embargo on April 8 in support of the Palestinians and urging other Arab states to join in the effort. None did. But with OPEC production cuts holding, thus reducing imports into the United States, crude oil inventories flattened out, unlike the situation last year when they rose by 24 million barrels in March and another 21 million barrels in April. Thus, crude oil markets in April and May continued to tighten up such that by the week ending May 3, the differential to year-ago crude oil inventories turned negative for the first time since March 2001.

Meanwhile gasoline prices leveled off at around \$1.40 per gallon, as increased refinery production and record setting levels of imports provided enough supply to stabilize prices. Although crude oil inventories declined to the bottom half of the normal range by the middle of May, gasoline inventories improved and both distillate fuel and gasoline inventories were back at the top of the normal range for that time of year. The remainder of this report discusses projected trends, depending on various events occurring.

The latter half of May and possibly June are expected to see a decline in product inventories, particularly those for gasoline. Already, there have been numerous reports of

refiners cutting back on production, as a relatively tight crude oil market combining with a currently well-supplied product market makes for unattractive refinery margins. Thus, it is likely that crude oil inputs to refineries will decline, thus helping stabilize the decline in crude oil inventories, but also forcing a reliance on product inventories to satisfy any increases in demand. Beginning with Memorial Day, gasoline demand is expected to pick up such that the summer of 2002 is expected to break demand records yet again. If abnormally high gasoline imports do not continue, then gasoline inventories should fall by the end of the second quarter, almost certainly to levels below last year, if only because stocks rose an unprecedented 26 million barrels over the April-June 2001 period.

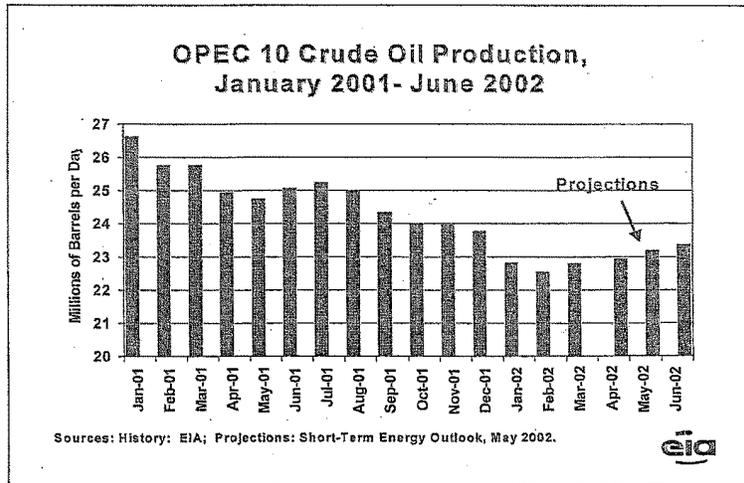


Uncertainty surrounds the crude oil market for June. The next phase of the United Nations oil-for-food program with Iraq is scheduled to begin on May 30. In the past, Iraq has often cut exports at the beginning of the 180-day phases. Although Iraqi government officials have made some comments that they would go along with the change in the sanction process made for the next phase, there have also been other statements decrying the need for sanctions at all and it is still unclear how much Iraq will export in June. Retroactive pricing is expected to continue regardless, having been recently expanded to include Asian deliveries. OPEC's next ministerial meeting will be held on June 26 and every indication at this point indicates no change in the production quotas. Even if Iraq does not stop exporting at the beginning of the upcoming phase of the oil-for-food

program, crude oil markets could be showing signs of increasing tightness at the end of June, especially if OPEC keeps production quotas constant as expected.

**July – September**

The third quarter could shape up as the most interesting period for petroleum markets in 2002. If OPEC keeps production quotas constant at their June 26 meeting, then crude oil and product markets, particularly gasoline could tighten up considerably. Of course, any outage of Iraqi exports that occurred in June would be felt in terms of reduced U.S. imports mainly in July due to the time it typically takes to ship crude oil from Iraq to the United States.



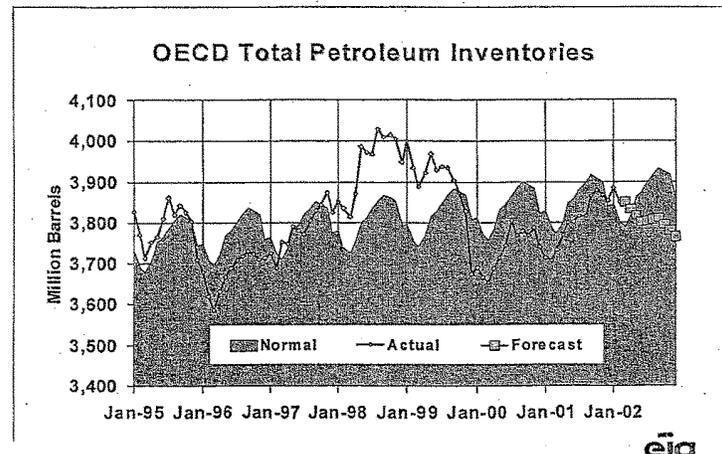
Additionally, gasoline demand is likely to peak in July or August as the economy continues to improve and some families opt to drive for their summer vacation rather than fly. This could lead to a decline in gasoline inventories and upward pressure on gasoline prices such that the peak gasoline price this summer could occur in July or August as opposed to the earlier seasonal peaks seen in 2000 and 2001. If this indeed occurs, refiners will need to shift back to producing more gasoline, just as they are preparing to shift their yields towards making more distillate fuel to build up supplies for the winter.

Fortunately, distillate fuel inventories are high enough as of mid-May to forecast that little building of distillate fuel inventories is needed this summer in order to have adequate inventories heading into the winter. However, nothing is certain and a shift back to maximizing gasoline yields in July and August is unusual. Typically, when gasoline prices rise at the end of summer, there is little refiners can do to supplement supplies, as by the time these additional supplies would enter the retail market, demand would have likely declined substantially by then.

Throughout this quarter, petroleum inventories are expected to either remain stable or even outright decline, although, globally, they typically increase by about 1 million barrels per day over this period in anticipation of peak winter requirements. If this scenario develops, prices could be much higher when OPEC is expected to meet again towards the end of September, and the pressure on OPEC to increase production quotas should be high.

#### October – December

Obviously, this period is the most uncertain of the year, since what happens during this period depends largely on what has happened in the previous quarter. Petroleum inventories should be much lower compared to normal and year-ago levels than they were as of mid-May, both globally and here in the United States. If inventories are relatively low heading into the fourth quarter, then prices would likely be around \$30 per barrel, or perhaps higher. This would have put a lot of pressure on OPEC to increase production quotas, assuming they had not done so in June. Clearly, demand should be much higher by the fourth quarter, as the seasonal upswing seen at this time of the year should be enhanced by an improving economy throughout the year. If OPEC somehow did not increase production quotas in June or September, or possibly at an intermediate meeting announced in June in deference to OECD concerns, then it is very possible that prices will rise to levels at some point in the fourth quarter that will bring OPEC together in an emergency meeting to increase quotas.



Of course, during the fourth quarter, the emphasis on refined products shifts from gasoline to distillate fuel. It does appear that the United States will enter the 2002/2003 heating season with plentiful distillate fuel inventories. Even if the build in distillate fuel inventories between the end of March and the end of September were to equal the lowest in the last 10 years (16.3 million barrels in 1995), distillate fuel inventories by the end of September 2002 would still be about 140 million barrels, which would be in the upper half of the normal range for that time of year. So, just as crude oil, rather than gasoline, will likely be the focus of petroleum markets in the summer of 2002, crude oil will also likely be the focus of petroleum in the winter of 2002/2003, as opposed to distillate fuel. What is fairly certain is that 2002 will end with crude oil prices (and product prices) considerably higher than they were back at the beginning of the year.

<p style="text-align: center;"><b>APPENDIX 4</b> <i>Additional Documents - #6</i></p>
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**United States Senate**

COMMITTEE ON  
GOVERNMENTAL AFFAIRS  
WASHINGTON, DC 20510-6250

December 9, 2002

The Honorable Spencer Abraham  
Secretary of Energy  
U.S. Department of Energy  
Washington, D.C. 20585

Dear Mr. Secretary:

For the past year, the Permanent Subcommittee on Investigations has been investigating the factors affecting the price of gasoline in the United States. Our current examination is focused upon the domestic and global crude oil markets, including the possible effect of the Strategic Petroleum Reserve (SPR) program on crude oil prices.

During the course of this investigation, the Department of Energy has been very helpful in providing the Subcommittee with information about the domestic crude oil markets and delivery of crude oil into the SPR. In order to ensure a complete and accurate understanding of recent decisions and actions taken by the Department and the Administration regarding the filling of the SPR, the Subcommittee requests that the Department provide the Subcommittee, by no later than December 23, 2002, copies of all documents (including any press statement, fact sheet, statement of policy, memorandum, briefing paper, correspondence, email, fax, handwritten or typed notes, or telephone call message) generated by or in possession of the Department concerning:

- (a) any request by a company or its representative to alter a delivery schedule previously agreed to under a contract with the DOE to deliver crude oil to the SPR at any time from November 2001 until October 2002, including but not limited to any communication between the Department and any such company or its representative related to such request;
- (b) any Department analysis, summary, or guidance related to the schedule for the filling of the SPR, prepared during or after October 2001;
- (c) possible impacts upon the price of crude oil from the filling of the SPR;

The Honorable Spencer Abraham  
December 3, 2002  
Page 2

- (d) any communication prepared during or after October 2001, between the Department and any other Executive Branch agency, department, or entity, including the Executive Office of the President, related to the schedule for the filling of the SPR or possible impacts upon the price of crude oil from filling the SPR; and
- (e) the Department's decision to exclusively deposit sweet crude oil into the SPR for the contract awarded in February 2002 to Equiva Trading Company to fill the SPR.

Thank you for your assistance in this matter. Should you or your staff have any questions or concerns, please contact one of us or have your staff contact Dan Berkovitz of Sen. Levin's staff at (202) 224-9505 or Kim Corthell of Sen. Collins staff at (202)224-3721.

Sincerely,



Susan M. Collins  
Ranking Minority Member  
Permanent Subcommittee on Investigations



Carl Levin  
Chairman  
Permanent Subcommittee on Investigations

CL/SMC:ls

**Department of Energy**

Washington, DC 20585

January 10, 2003

The Honorable Carl Levin  
Chairman  
Permanent Subcommittee on Investigations  
Committee on Governmental Affairs  
United States Senate  
Washington, D.C. 20510

Dear Mr. Chairman:

This is in response to the letter to Secretary Abraham from you and Senator Collins, Ranking Member of the Subcommittee, dated December 9, 2002. In that letter, the Subcommittee requested that the Department of Energy (DOE) supply certain documents concerning the Strategic Petroleum Reserve. The letter requested a response by December 23, 2002, but based on discussions with the Subcommittee staff, it was agreed that DOE would respond to the letter by January 10, 2003.

To date we have located certain documents that may be responsive to the requests in the Subcommittee's December 9 letter, and those documents are enclosed. Certain additional documents still are under review. We will make available to the Subcommittee at a future date any of those documents that are determined to be responsive and properly produced to the Subcommittee.

Please note that numerous documents being supplied to you today contain information that is subject to the deliberative process privilege. Other documents contain information that is or may be protected from public disclosure by the Trade Secrets Act (see 18 U.S.C. 1905) because the information is trade secret material or is otherwise proprietary and confidential information of a person or entity. DOE's disclosure of the documents being provided to you today in response to the Subcommittee's request does not constitute a waiver of any applicable privilege or any exemption under the Freedom of Information Act (FOIA) that DOE may claim in response to FOIA requests for these documents. DOE's disclosure of these documents to you also does not constitute a waiver of any applicable legal privilege or protection that DOE or any other party may claim in litigation or other proceedings. DOE therefore requests that you preserve the confidentiality of the documents being provided to you today by refraining from providing copies of them or from otherwise communicating their contents to persons other than those with a need to know as part of the Subcommittee's oversight and investigatory review.

Please contact Ann Thomas Johnston in DOE's Office of Congressional and Intergovernmental Affairs, at 202-586-5450, if you have any questions about DOE's response to the Subcommittee's requests.

Sincerely

A handwritten signature in black ink, appearing to read "Carl Michael Smith". The signature is fluid and cursive, with a prominent initial "C" and a long, sweeping underline.

Carl Michael Smith  
Office of Fossil Energy

cc w/enc: The Honorable Susan M. Collins  
Ranking Member

SUSAN M. COLLINS, MAINE, CHAIRMAN  
 TED STEVENS, ALASKA  
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## United States Senate

COMMITTEE ON  
 GOVERNMENTAL AFFAIRS  
 WASHINGTON, DC 20510-6250

March 4, 2003

The Honorable Spencer Abraham  
 Secretary of Energy  
 U.S. Department of Energy  
 Washington, D.C. 20585

Sent by mail and by fax to 202-586-4891

Dear Mr. Secretary:

The purpose of this letter is to request in writing a copy of the documents that the U.S. Department of Energy (DOE) has not provided in connection with the U.S. Senate Permanent Subcommittee on Investigations' examination of DOE's management of the Strategic Petroleum Reserve (SPR). I understand that DOE has determined that these documents are responsive to the Subcommittee's pending document request, but has declined to produce the documents at the request of White House counsel. DOE has been asked but has not provided to date a written explanation of the basis for its decision not to produce the requested documents.

On December 9, 2002, the Subcommittee sent DOE a letter signed by myself in my role at the time as Subcommittee Chairman and signed by Senator Susan Collins, then Ranking Member of the Subcommittee and now Chairman of the full Governmental Affairs Committee. Our letter requested documents in the possession or control of DOE concerning the following matters:

- (a) any request by a company or its representative to alter a delivery schedule previously agreed to under a contract with the DOE to deliver crude oil to the SPR at any time from November 2001 until October 2002, including but not limited to any communication between the Department and any such company or its representative related to such request;
- (b) any Department analysis, summary, or guidance related to the schedule for the filling of the SPR, prepared during or after October 2001;
- (c) possible impacts upon the price of crude oil from the filling of the SPR;
- (d) any communication prepared during or after October 2001, between the Department and any other Executive Branch agency, department, or entity, including the Executive Office of the President, related to the schedule for the filling of the SPR or possible impacts upon the price of crude oil from filling the SPR; and
- (e) the Department's decision to exclusively deposit sweet crude oil into the SPR or the contract awarded in February 2002 to Equiva Trading Company to fill the SPR.

The Honorable Spencer Abraham  
March 4, 2003  
Page Two

In January 2003, DOE produced a number of documents responsive to this request, along with a letter dated January 10, 2003, stating that additional documents were under review and would be made available to the Subcommittee at a future time. In February 2003, my staff was informed in a telephone conversation with DOE staff that, at the request of White House counsel, the additional documents would not be produced, because they contained communications between DOE and White House personnel such as persons at the National Economic Council.

On February 24, 2003, a meeting was held to discuss the document request and investigation, attended by representatives of DOE, the Majority Governmental Affairs Committee staff, the Majority Subcommittee staff under our new Subcommittee Chairman Norman Coleman, the Minority Subcommittee staff, and Senate Legal Counsel. At this meeting, DOE staff again stated that, at the request of White House counsel, the documents would not be provided, estimating the total pages withheld at 10 to 20 pages. DOE was asked to submit a letter to the Subcommittee identifying each of the documents, the subject matter of the document, and the reason for its being withheld. On February 27, 2003, DOE staff informed Subcommittee staff that this letter would not be provided that week and left it unclear as to when one would be provided to the Subcommittee.

Pursuant to Senate Resolution 54, in effect when the document request was issued, and Senate Resolution 66, adopted by the Senate last month, the Committee on Governmental Affairs and the Permanent Subcommittee on Investigations are authorized "to study or investigate the efficiency and economy of all branches of the Government." The Committee and Subcommittee's jurisdiction includes specific authorization to investigate "the efficiency, economy and effectiveness of all agencies and departments of the Government involved in the control and management of energy shortages including, but not limited to, their performance with respect to . . . the allocation of fuels in short supply by public and private entities; [and] the management of energy supplies owned or controlled by the Government." The Committee and Subcommittee's jurisdiction clearly encompasses an examination of DOE's management of crude oil supplies in the Strategic Petroleum Reserve.

DOE has known for some time now that the Subcommittee has been examining DOE's management of the SPR and the impact that filling the SPR in 2002 has had on U.S. oil prices and oil supplies. The withheld documents appear to be directly related to DOE's decisions in 2002 to fill the SPR, other DOE documents indicate that White House personnel directly influenced DOE's decisions in this area, and the documents are, therefore, relevant to our understanding of the decisions that DOE made. Because the documents being withheld are in DOE's possession and control, they are not White House records, and should be produced. Even if they were White House records, the Subcommittee has jurisdiction to review them under these circumstances.

The Honorable Spencer Abraham  
March 4, 2003  
Page Three

Another pending issue involves a key internal SPR document entitled, "Options for Filling the Strategic Petroleum Reserve," which was produced to the Subcommittee in January but ends in mid-sentence a third of the way down the final page. Despite several requests, DOE has not indicated whether the remainder of the document was redacted by the Department and, if so, the basis for this redaction. Nor has DOE provided a complete version of the document.

Thank you for your assistance in these matters. I would appreciate receiving a written response to this letter by March 11, 2003, providing either copies of the requested documents, or a list identifying each withheld document, its subject matter, and the reason it is being withheld. I would also appreciate receiving a complete version of the document that now ends in mid-sentence or an explanation for the missing or redacted portion. If you have any questions, please contact me or have your staff contact Dan Berkovitz of my staff at (202) 224-9505.

Sincerely,



Carl Levin  
Ranking Minority Member  
Permanent Subcommittee on Investigations

CL/lis

cc: The Honorable Susan M. Collins, Chairman, Committee on Governmental Affairs  
cc: The Honorable Norman Coleman, Chairman, Permanent Subcommittee on Investigations



Department of Energy  
Washington, DC 20585

March 19, 2003

The Honorable Norm Coleman  
Chairman  
Permanent Subcommittee on Investigations  
Committee on Governmental Affairs  
United States Senate  
Washington, D.C. 20510

The Honorable Carl Levin  
Ranking Minority Member  
Permanent Subcommittee on Investigations  
Committee on Governmental Affairs  
United States Senate  
Washington, D.C. 20510

Dear Chairman Coleman and Ranking Member Levin:

This letter is in further response to the letter from the Permanent Subcommittee on Investigations to the Department of Energy (DOE), dated December 9, 2002, which requested certain documents related to the Strategic Petroleum Reserve.

On January 10, 2003, DOE provided to the Subcommittee a number of documents in response to its request. As noted in DOE's January 10 transmittal letter, many of the documents provided to the Subcommittee were subject to the deliberative process privilege or contained information that is or may be protected from public disclosure by the Trade Secrets Act (18 U.S.C. 1905).

The January 10 letter further noted that certain additional documents were still under review at that time, and would be provided to the Subcommittee at a later date if appropriate. Our review of those documents is now complete and several of those additional documents are being provided to the Subcommittee today with this letter. Please note that many of these documents contain information that is subject to the deliberative process privilege. Other documents contain information that is or may be protected from public disclosure by the Trade Secrets Act because the information is trade secret material or is otherwise proprietary and confidential information of a person or entity. DOE's disclosure of the documents being provided to you today in response to the Subcommittee's request does not constitute a waiver of any applicable privilege or any exemption under the Freedom of Information Act (FOIA) that DOE may claim in response to FOIA requests for these documents. DOE's disclosure of these documents to you also does not constitute a waiver of any applicable legal privilege or protection that DOE or any other party may claim in litigation or other proceedings. DOE therefore requests that you preserve the confidentiality of the documents being provided to you today by refraining from providing copies of them or from otherwise communicating their contents to persons other than those with a need to know as part of the Subcommittee's oversight and investigatory review.

Some of the additional documents referenced in the January 10 letter are not being provided to the Subcommittee because they constitute or reflect confidential White House communications.



For this same reason, DOE will not be providing these documents to Senator Levin in response to his March 4, 2003 letter which requested copies of these additional documents.

If you have any questions, please contact Shannon Henderson, Acting Assistant Secretary for Congressional and Intergovernmental Affairs, at 202-586-5450

Sincerely,

A handwritten signature in black ink, appearing to read "Carl Michael Smith". The signature is fluid and cursive, with a prominent loop at the end.

Carl Michael Smith  
Assistant Secretary  
Office of Fossil Energy

Enclosures

**Date:** 3/25/2003 1:41 PM  
**Sender:** "Johnston; AT" <AT.Johnston@hq.doe.gov>  
**To:** kim corthell; dan berkowitz; elise bean  
**Priority:** Normal  
**Subject:** Follow-up to document request

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I do apologize for the delay in getting an answer to you.

This is in response to your follow-up to DOE's March 19, 2003 letter, by which DOE provided to the Permanent Subcommittee on Investigations certain documents the Subcommittee had requested relating to the Strategic Petroleum

Reserve. In your follow-up, you reiterated the request made by Sen. Levin in his March 4, 2003 letter that DOE provide a list of documents that are not being provided to the Subcommittee, the subject of each, and the reason for withholding it.

DOE's March 19 letter explained why DOE has withheld certain documents - they constitute or reflect confidential White House communications. The request for a list of these documents originated with Sen. Levin's March 4 letter, and therefore is a request by him in his capacity as an individual Senator, rather than one from the Subcommittee.

The Department does not have a list of the type requested by Sen. Levin. I understand that creation of logs of withheld documents is not required in administration by agencies of the Freedom of Information Act. Therefore, DOE is not in a position to prepare and submit to Sen. Levin a list of the sort requested in his March 4 letter.

Ann Thomas Johnston  
Deputy Assistant Secretary for Energy Policy  
Congressional and Intergovernmental Affairs  
US Department of Energy  
202-586-2701